

434877



U.S. Department Of Transportation
Federal Motor Carrier Safety Administration

FMCSA-2009-23818-4

NOTICE OF PROPOSED RULEMAKING
INSPECTION, REPAIR AND MAINTENANCE REQUIREMENTS FOR
INTERMODAL EQUIPMENT PROVIDERS

Regulatory Analysis

April 2006

By
Analysis Division
Federal Motor Carrier Safety Administration
U.S. Department of Transportation

And

Economic and Industry Analysis Division
Volpe National Transportation Systems Center
U.S. Department of Transportation

For Internal Use Only

Executive Summary

This Regulatory Impact Analysis (RIA) provides an assessment of the costs and benefits of proposed amendments to the Federal Motor Carrier Safety Regulations (FMCSRs) to more explicitly identify the vehicle inspection, maintenance, and repair responsibilities of entities that offer intermodal container chassis for transportation in interstate commerce. The Federal standards for vehicle inspection, repair, and maintenance of trailing equipment are already clearly identified in the FMCSRs. However, the proposed rule would enable FMCSA to more effectively monitor the safety performance profile of intermodal equipment providers by allowing it to directly tie violations of intermodal equipment found at roadside inspections to the entity controlling its inspection, maintenance and repair, as well as its transfer to motor carriers. The purpose of this rulemaking is to (1) ensure that intermodal equipment operating in interstate commerce on the Nation's highways is safe, and (2) reduce the likelihood of crashes attributed in whole or in part to the mechanical condition of intermodal equipment offered by equipment providers to motor carriers. The proposed rule is not intended to unnecessarily involve the agency in the commercial relations or allocation of liability between intermodal parties.

FMCSA has long had the authority under existing statutes to regulate the maintenance and inspection of intermodal equipment. That authority is based on the statutory definitions of “commercial motor vehicles,” “employees,” and “employers” found at 49 U.S.C. 31132. However, existing statutes have traditionally not included explicit references to intermodal equipment. Section 4118 of Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) changed that by directing the U.S. Department of Transportation to more explicitly regulate the providers of intermodal equipment and the inspection and maintenance of the equipment tendered. The proposed rulemaking is fully consistent with SAFETEA-LU. Neither the rulemaking nor SAFETEA-LU, it should be noted, relieves commercial motor vehicle drivers or motor carriers of liability for damage they may inflict on intermodal equipment or resulting from crashes, because determination (or assignment) of liability is not the purpose of either.

Potential costs considered in this RIA include costs to:

- File a Motor Carrier Identification Report (FMCSA Form MCS-150),
- Display a unique identification number (USDOT number) on each chassis,
- Establish a systematic inspection program, and a repair and maintenance program to ensure the safe operating condition of each chassis,
- Maintain documentation of the inspection program, and
- Establish a new reporting system for defective and deficient equipment.

Complete details of each of these costs items are discussed in the full document.

When considering the cost impact of the proposed rule, it should be recognized that some of these costs are already being incurred by industry. For instance, motor carriers that control their own intermodal chassis are currently performing periodic inspections, as well as routine repair and maintenance on their chassis. Intermodal equipment providers (IEPs) are performing some annual inspections and some repair and maintenance on their chassis. Motor carriers using those chassis are also doing some limited repair and maintenance work on the chassis. Therefore, the costs of this rule are lower than they would be if IEPs were not performing any inspections, repairs, or maintenance.

Anticipated benefits from this rule include safety benefits from avoided crashes due to intermodal equipment failure. Additionally, efficiency benefits are anticipated as a result of reducing the number of roadside breakdowns of intermodal equipment, which otherwise result in reduced productivity for commercial truck drivers and other (non-commercial) drivers as a result of subsequent highway congestion.

The total compliance costs of this rule were estimated to be between \$147 million and \$242 million in the first 10 years following implementation of the regulations. The proposed rule would be cost-effective if it annually prevents between six and ten fatalities resulting from crashes involving a tractor hauling an intermodal chassis. Additionally, reducing the number of injuries, property damage, and other incident consequences would reduce the number of lives that would need to be saved annually in order for the proposed rule to be cost-beneficial.

Table of Contents

Executive Summary	i
1 Purpose and Need for Action	5
1.1 Introduction.....	5
1.2 Background	6
1.2.1 Previous Rulemaking on Chassis.....	6
1.2.2 New Legislation Relating to Intermodal Equipment (Including Chassis).....	6
1.2.3 Current Efforts by DOT	7
1.2.4 Intermodal Freight Overview.....	7
1.2.5 Assignment of Responsibility	10
1.3 Rationale for a Regulatory Assessment	11
1.3.1 Regulatory Alternatives Considered	12
1.3.2 Policy Issues Spurring Proposed Regulatory Change.....	13
1.3.3 Inspection Frequency	14
1.3.4 Data	14
2 Economic Analysis.....	15
2.1 Background	16
2.1.1 Crashes involving intermodal equipment	16
2.1.2 Intermodal Equipment Out-of-Service (OOS) Rates.....	17
2.1.3 Liability.....	20
2.2 Number of Affected Entities	21
2.3 Number of Intermodal Chassis.....	22
2.4 Compliance Costs.....	24
2.4.1 Costs Associated with Filing an Intermodal Equipment Provider Identification Report (MCS-150C)	24
2.4.2 Costs Associated with Displaying a Unique Identification Number on Each Chassis	26
2.4.3 Costs Associated with Systematic Inspection, Repair, and Maintenance (IRM) Programs	28
2.4.4 Costs Associated with Record Keeping	41
2.4.5 Costs of New Defective and Deficient Equipment Reporting	43
2.4.6 Total Compliance Costs of the Proposed Regulations.....	46
2.5 Estimation of Benefits.....	47
2.5.1 Threshold Analysis for Safety Benefits	48
2.5.2 Benefits Associated with Increased Operational Efficiency.....	49
2.5.3 Benefits Summary.....	51
2.6 Comparison of Costs and Benefits.....	51
3 Appendix 1	54
Estimates for Potential Cost Savings due to Reduction in Vehicle Out-of-Service Violation Rates for Intermodal Chassis.....	54
4 Rulemaking Analyses and Notices.....	58
4.1 Executive Order 12866 (Regulatory Planning and Review)	58
4.2 Regulatory Flexibility Act	60

4.3	Unfunded Mandates Reform Act of 1995	63
-----	--	----

List of Tables

Table 1: Types of Crashes with Contributing Vehicle Defects	17
Table 2: Comparison of Non-intermodal vs. Intermodal Out-Of-Service (OOS) Rates	18
Table 3: Intermodal Out-of-Service (OOS) Rate by Type of Chassis Ownership ...	19
Table 4: Estimated Number of Affected Entities	22
Table 5: Estimated Number of Intermodal Chassis by Owner	24
Table 6: Costs of Filing a Motor Carrier Identification Report (MCS-150).....	26
Table 7: Estimated Cost of Chassis Marking	27
Table 8: IANA's Recommended Systematic Maintenance Check (SMC)	31
Table 9: Chassis Inspection and Maintenance by Three Railroads, 2003	34
Table 10: Chassis Inspection and Maintenance by Seven Steamship Lines, 2003 ...	35
Table 11: Estimated Cost of Systematic IRM Programs for Chassis	41
Table 12: Estimated Cost of Record Keeping	43
Table 13: Estimated Costs of the Proposed Rule	47
Table 14: Estimated Costs of Crashes involving Truck Tractors with Trailers, 2002	49
Table 15: Comparison of Costs and Benefits of the Proposed Regulation	52
Table 16: Out-of-Service (OOS) Rates of Non-intermodal and Intermodal Semitrailers; Data from the Motor Carrier Management Information System (MCMIS), CY2003	55
Table 17: Small Business Size Standards for the Potentially Affected Industries ...	61

List of Figures

Figure 1: Containership Capacity at U.S. Ports (Million DWT/TEU).....	8
Figure 2: Characteristics of Intermodal Freight Volumes in the United States	9

1 Purpose and Need for Action

1.1 Introduction

The primary mission of the Federal Motor Carrier Safety Administration (FMCSA) is to reduce crashes, injuries, and fatalities involving large trucks and buses. In carrying out its safety mandate, FMCSA develops and enforces regulations that balance motor carrier (truck and bus companies) safety with industry efficiency.¹ FMCSA is proposing to amend a number of requirements in the Federal Motor Carrier Safety Regulations (FMCSRs; 49 CFR Parts 385, 386, 390, 392, 393, and 396) in a new rulemaking entitled “Inspection, Repair and Maintenance Requirements for Intermodal Container Chassis Equipment Providers.” The proposed rule includes changes that would

- Add an explicit reference to intermodal equipment providers so they could be subject to the same enforcement proceedings, orders and civil penalties as motor carriers, property brokers, and freight forwarders;
- Require that intermodal equipment providers identify themselves to FMCSA by submitting completed Motor Carrier Identification Reports, and mark their intermodal equipment with a USDOT identification number;
- Ensure that intermodal equipment providers provide safe and properly working intermodal equipment;
- Require that intermodal equipment providers establish systematic inspection, repair and maintenance programs and maintain records documenting those programs; and
- Provide a means for effectively responding to driver and motor carrier complaints about the condition of intermodal chassis tendered to them.
- Identify a specific list of intermodal equipment items or components that the driver is responsible for inspecting and determining are in good working order before operating the intermodal equipment.
- Require that facilities at which an intermodal equipment provider regularly makes intermodal equipment available for interchange have an operational process and space readily available for a motor carrier to have any identified equipment defects repaired or the equipment replaced prior to departure.
- Prohibit intermodal equipment providers from placing intermodal equipment in service on public highways when the providers or their equipment are found to pose an imminent hazard.

“Intermodal equipment,” as used in the proposed rule, is defined as follows:

...trailing equipment that is used in the intermodal transportation of containers over public highways in interstate commerce, including trailers and chassis.²

¹ See “FMCSA’s Strategy” at www.fmcsa.dot.gov/about/what-we-do/strategy/strategy.htm.

² See Safe, Accountable, Flexible Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Title IV Motor Carrier Safety, Section 4118.

The overall goal of the proposed rule is to ensure the safety of intermodal equipment used on the Nation's highways by ensuring that the safety regulations that apply to that equipment and its providers are consistent with the safety requirements for other similar commercial motor carrier equipment and to ensure compliance with those requirements.

This analysis examines in details the economic impact of the proposed regulatory changes. In this analysis, the benefits and costs of those changes are considered. Additionally, the impacts of the changes on small business entities are reviewed.

1.2 Background

Transportation safety is the Department of Transportation's (DOT's) top strategic priority. Because the human toll and economic cost of transportation accidents are substantial, improving transportation safety is an important objective of all DOT modes. Within DOT, the FMCSA is primarily focused on ensuring highway safety. The Secretary of Transportation has promulgated the FMCSRs to further this purpose. The systematic maintenance, repair, and inspection requirements for equipment used on public highways in interstate commerce are an integral part of this safety regime.

1.2.1 Previous Rulemaking on Chassis

In 1999, the Federal Highway Administration (FHWA) issued an Advance Notice of Proposed Rulemaking (ANPRM) concerning inspection, repair, and maintenance of intermodal chassis in response to a petition for a rulemaking by the American Trucking Associations (ATA). In 2003, however, FMCSA withdrew the ANPRM due to a lack of definitive data.

1.2.2 New Legislation Relating to Intermodal Equipment (Including Chassis)

Recently, Congress and the President demonstrated their interest in ensuring the safety of intermodal equipment moving on the Nation's highways. On August 10, 2005, President George W. Bush signed into law the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit from 2005 through 2009. Section 4118 of SAFETEA-LU addresses the roadability of intermodal equipment (i.e., the safety and roadworthiness of intermodal trailers, chassis, and other "trailing equipment"). Among other things, SAFETEA-LU establishes that equipment providers are responsible for maintaining intermodal equipment and vests authority with the U.S. Department of Transportation to inspect intermodal equipment and to take out of service equipment that fails to comply with applicable safety regulations.

1.2.3 Current Efforts by DOT

A renewed effort by FMCSA, working in coordination with other DOT agencies, to ensure the safety of intermodal chassis got underway in 2004. The objective of that effort is to advance DOT's strategic safety goal without unnecessarily involving DOT in the commercial relations or allocation of liability between intermodal parties. The current rulemaking is part of that effort.

On January 26, 2004, the Secretary of Transportation announced that DOT would launch a safety inspection program for intermodal equipment providers, most notably the chassis that are tendered by ocean carriers, rail carriers, and others to motor carriers. The inspection program would provide added oversight to help ensure that the intermodal chassis used by motor carriers to transport intermodal cargo containers from seaports and rail yards are in safe and proper working order.³

FMCSA has long had the authority under existing statutes to regulate the maintenance and inspection of intermodal equipment. That authority is based on the statutory definitions of "commercial motor vehicles," "employees," and "employers" found at 49 U.S.C. 31132. Until recently, existing statutes have generally not included explicit references to intermodal equipment. Section 4118 of SAFETEA-LU changed that by giving the U.S. Department of Transportation the explicit authority to regulate the maintenance and inspection of intermodal equipment. Neither the proposed rulemaking nor SAFETEA-LU, it should be noted, relieves commercial motor vehicle drivers or motor carriers of liability for damage they may inflict on intermodal equipment or resulting from crashes, because determination (or assignment) of liability is not the purpose of either.

1.2.4 Intermodal Freight Overview

Intermodal freight transportation includes any movement of goods that involves two or more modes of transport; for example, shipments of goods in containers that are transferred between ships and trucks, or railcars and trucks. In the U.S., intermodal shipments include international, domestic, and premium freight.⁴ Containerized freight movements accounted for 1.7 percent of all U.S. freight movements in 2002, measured in tons, and approximately 13 percent of the value of shipments, according the Commodity Flow Survey.⁵ Intermodal freight is essential in international trade. With evolving economic globalization, intermodal transport plays a critical role in making supply chains efficient for shippers, carriers, retailers and others. Intermodal transfers, which often

³ Intermodal container chassis are trailers specifically designed to transport cargo containers.

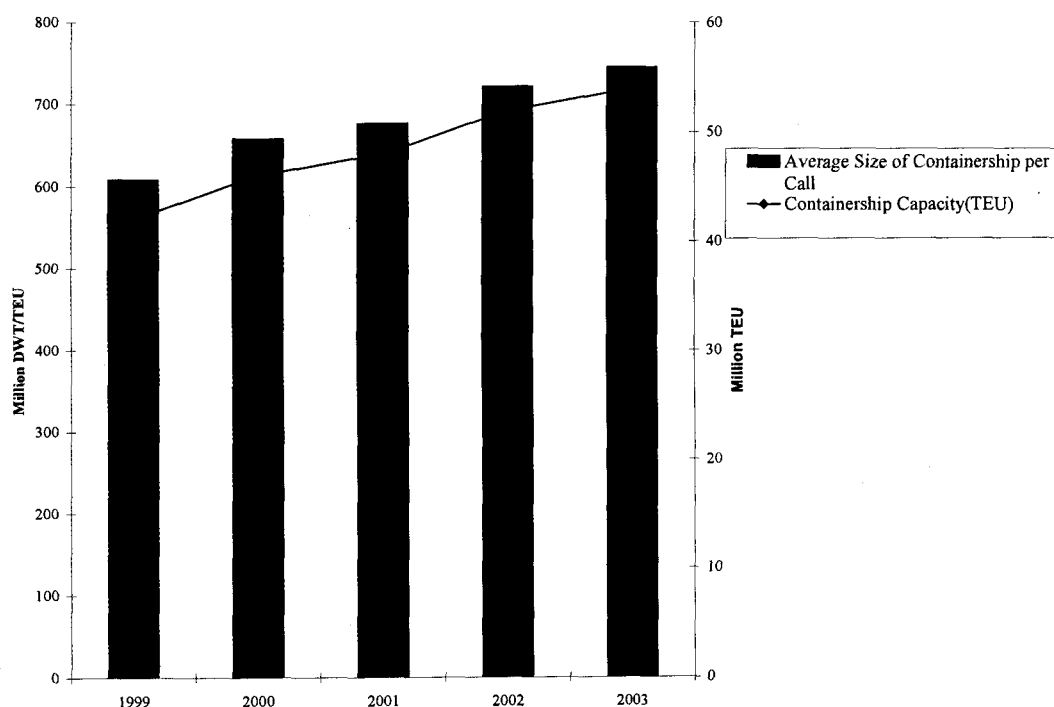
⁴ International intermodal freight consists of containerized freight entering or leaving the U.S. on ships. Domestic intermodal freight consists of containerized freight that originates and terminates in the U.S., Canada, or Mexico. Premium freight, frequently generated by less-than-truckload and parcel carriers, is a special category of domestic intermodal freight that is generally time-sensitive in nature.

⁵ The Commodity Flow Survey (CFS) obtains data on shipments by domestic establishments in manufacturing, wholesale, mining, and selected other industries. The U.S. Census Bureau, in partnership with the Bureau of Transportation Statistics of the U.S. Department of Transportation, conducts the CFS as part of the Economic Census.

require extensive coordination between a number of private firms, as well as governmental entities, have potential bottlenecks, both physical and organizational, that can affect the performance of the entire freight transportation system.⁶ The operational efficiency of the intermodal freight system can increase the reliability and cost-effectiveness of goods movements throughout the Nation's transportation system.

There has been significant and sustained growth in ocean-borne container cargo volumes. Even with economic slowdowns in 2001-2003, the average size of containerships (per call) increased by 23 percent between 1999 and 2003.⁷ During this same period, the containership capacity (in TEU⁸) calling at U.S. ports increased by 29 percent. Figure 1 depicts the containership size and capacity at U.S. ports between 1999 and 2003.

Figure 1: Containership Capacity at U.S. Ports (Million DWT⁹/TEU)



Source: U.S. DOT Maritime Administration, Vessel Calls at U.S. Ports, 2003.

⁶ Transportation Research Board, *Policy Options for Intermodal Freight Transportation*, Special Report 252, TRB, Washington, DC, 1998.

⁷ U.S. Department of Transportation, Maritime Administration, Vessel Calls at U.S. Ports, 2003, available on the Internet at www.marad.dot.gov/Marad_Statistics/vcalls2003.pdf.

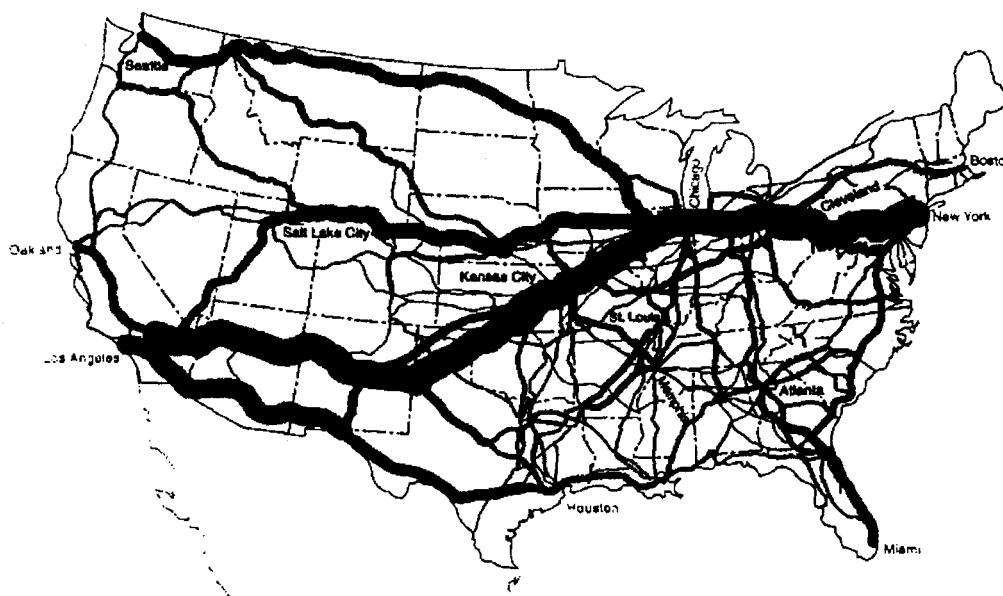
⁸ TEU = a standardized unit of measure equivalent to a twenty-foot container.

⁹ DWT = Dead weight tons.

In recent years, according to the Maritime Administration, foreign container traffic (imports and exports) at U.S. ports has been growing annually at a rate of about seven percent. In 2003, foreign container traffic was estimated to be 21.3 million TEUs.¹⁰

According to the Commodity Flow Survey, approximately 198 million tons of commodities with a value of \$1.1 trillion were transported utilizing more than one mode of transportation in 2002. Those goods utilized about 456 freight-only intermodal terminals on the national highway system in United States.¹¹ This includes 253 truck-and-port terminals and 203 truck-and-rail terminals.¹² Figure 2 shows the flow of intermodal freight volumes in the U.S.

Figure 2: Characteristics of Intermodal Freight Volumes in the United States



Source: Fourth Forum on Intermodal Freight Transport Between Europe and the United States, 2001. ops.fhwa.dot.gov/freight/documents/genoa_rpt.doc.

Intermodal traffic is an important source of revenue for the Nation's transportation companies. For instance, according to the Association of American Railroads (AAR), intermodal traffic accounted for over 20 percent of the revenue of the major U.S. railroads in 2003.¹³

¹⁰ U.S. Department of Transportation, Maritime Administration, Industry Survey Series: Mainstream Container Services, 2003, June 2004, available on the Internet at www.marad.dot.gov/Marad_Statistics/Mainstream_Container.pdf.

¹¹ "National Highway System – Intermodal Freight Connector," A Report to Congress, USDOT, July 2000.

¹² Additionally, there are 61 pipeline-truck terminals and 99 airport-truck terminals according to the above-mentioned report.

¹³ Association of American Railroads, "Overview of U.S. Freight Railroads," September 2004, available on

1.2.5 Assignment of Responsibility

A unique aspect of intermodalism is the transfer of containers and chassis among carriers in different transportation modes. Containers may be interchanged with or without the chassis that transport them. For example, a container may arrive on a railcar, be unloaded from that railcar onto a chassis, and be moved by drayage (truck-haul) to the intermodal facility of a port terminal, where it is unloaded from the chassis onto a ship for the next leg of its journey. Highway movements of containers (by drayage or long and short haul truck transport) take place on chassis¹⁴ or trailers that are owned by steamship lines, railroads, trucking companies, shippers or equipment leasing companies. As intermodal traffic continues to grow, the transfers of containers and chassis among carriers will become even more important.

Since the 1990s, truckers, railroads and steamship lines have been at odds over who is responsible for the inspection, maintenance, and repair of the trailers and chassis that are used in transferring freight at intermodal facilities. Currently in North America, the Uniform Intermodal Interchange and Facilities Access Agreement (UIIA) governs the interchange of most intermodal equipment.¹⁵ The UIIA covers approximately 5,400 motor carriers and 60 equipment owners. The UIIA includes the following provisions pertaining to the roadability of chassis:¹⁶

- The chassis (or other intermodal equipment) provided by the equipment owner will have a valid FMCSA periodic inspection sticker.
- If the sticker will expire during the time that the trucking firm has possession of the equipment, the trucking firm may require the equipment owner to inspect and recertify the chassis prior to its taking possession.
- The parties to the agreement (or their representatives) shall inspect the equipment.
- The fitness of the equipment is not guaranteed, but the responsibilities of the parties to the agreement under the FMCSRs are acknowledged in a general way.

Although motor carriers and their drivers often receive chassis and other intermodal equipment to be transported by highway in interstate commerce, they do not possess the necessary level of control or authority over this intermodal equipment to perform the systematic maintenance and repair necessary to ensure full compliance with the applicable FMCSRs and to provide for the safe operation of the equipment on U.S. highways. The visual inspections performed by drivers at the time that they take possession of chassis were not designed to be as comprehensive as periodic inspections, and thus may not catch all of the problems or emerging problems that a periodic

the Internet at www.aar.org/PubCommon/Documents/AboutTheIndustry/Overview.pdf.

¹⁴ A chassis is a framework equipped with wheels, which when loaded with a container, results in something functionally similar to a highway trailer; i.e., a chassis is a specialized semi-trailer. The container is fixed to the chassis by twist locks that are incorporated in the chassis.

¹⁵ The Intermodal Association of North America (IANA) administers this agreement. The UIIA governs most, but not all, intermodal agreements in the United States.

¹⁶ Alan M. Robinson, "Intermodal Truck Equipment Safety: Legislation in the 108th Congress," May 6, 2004, CRS Report for Congress, Congressional Research Service, p. 5.

inspection would.¹⁷ During roadside inspections, motor carriers and their drivers have claimed that they are cited and fined for violations of the FMCSRs attributable to intermodal equipment that they do not have the opportunity to systematically maintain.

Currently, the insurance liability for a chassis or intermodal trailer is covered under the policies of motor carriers.¹⁸ Five states, New Jersey, California, South Carolina, Louisiana, and Illinois, have passed roadability legislation requiring equipment owners to certify, under penalty of perjury, that their chassis are safe. Under California state law, citations issued for chassis violations are assigned to the entity with ownership of the chassis. Similar bills have been proposed in Pennsylvania, Florida, Texas, and Virginia. The American Trucking Associations (ATA) has proposed that responsibility for chassis safety be assigned to the owners of the chassis through Federal legislation or rulemaking, and has urged the implementation of a national rule on chassis roadability.

Based on the latest available data, the estimated cost of police-reported crashes involving a large truck with a gross weight rating of more than 10,000 pounds averaged \$62,613.¹⁹ The cost increases to \$76,698 if a truck tractor with one trailer is involved.²⁰ In 2002, an estimated 4,542 large trucks were involved in fatal crashes, of which 63 percent involved a tractor with semi-trailer. FMCSA believes that a portion of these crashes can be attributed to the mechanical condition of intermodal chassis.

The proposed rule would reduce the likelihood of crashes attributed in whole or in part to the mechanical condition of intermodal container chassis without unnecessarily involving the agency in the commercial relations or allocation of liability among intermodal parties. In addition to directly supporting the DOT's safety goal, the proposed regulation would indirectly support DOT's role in promoting global connectivity by improving the safety of essential intermodal transportation linkages.

1.3 Rationale for a Regulatory Assessment

Executive Order 12866 directs all Federal agencies to develop both preliminary and final regulatory analyses if their proposed regulations are likely to be "significant regulatory actions" that may have an annual impact on the economy of \$100 million or more. The Order also requires a determination as to whether a proposed rule could adversely affect the economy or a section of the economy in terms of productivity and employment, the environment, public health, safety, or state, local or tribal governments. In accordance

¹⁷ In accordance with § 396.13, drivers are required to perform an inspection to be satisfied that the motor vehicle is in safe operating condition prior to taking the vehicle onto the highway.

¹⁸ Trailer Interchange coverage covers physical damage to non-owned equipment (containers, chassis, and trailers) while in the motor carrier's care, custody and control.

¹⁹ Eduard Zaloshnja and Ted Miller, "Costs of large truck-involved crashes in the United States" *Accident Analysis and Prevention*, Volume 36, 2004, pp. 801-808. The Zaloshnja and Miller paper presented estimates in 2000 dollar; this evaluation puts those estimates in 2003 dollars.

²⁰ These costs represent the present value of all costs over the victim's expected life span that result from a crash, computed using a four percent discount rate. The costs are medically related costs, emergency services costs, property damage costs, lost productivity, and monetized value of the pain, suffering, and quality of life adjustments.

with the regulatory philosophy and principles provided in Sections 1(a) and (b) and Section 6(a)(3)(C) of Executive Order 12866, an economic analysis of the proposed regulatory changes must be conducted. Furthermore, the Regulatory Flexibility Act of 1980, as amended, requires Federal agencies to conduct a separate analysis of the economic impact of proposed rules on small entities, and the Unfunded Mandates Act also requires economic impact analysis.

In accordance with the above directives, FMCSA has performed a preliminary evaluation of the potential compliance costs of the proposed rule and feasible regulatory options and identified those benefits that can be expressed in monetary terms. To the extent possible, this is based on the available data and information from a range of sources, including FMCSA's Motor Carrier Management Information System (MCMIS) database. FMCSA estimates that the impact of implementing the rule would not be greater than \$100 million annually, nor would the rule adversely affect the economy or a section of the economy in terms of productivity and employment, the environment, public health, safety, or State, local or tribal governments. FMCSA has also estimated, as required by the Regulatory Flexibility Act, that the proposed rule would not have a significant economic impact on a substantial number of small entities in the United States. However, because there was some uncertainty regarding the compliance cost impact to common-pool chassis operators, FMCSA prepared an Initial Regulatory Flexibility Analysis (IRFA) which is contained in the preamble to this proposed rule. Additionally, it was determined that the rule would not impose annual expenditures of \$120.7 million or more on State, local, or tribal governments or the private sector (and thus does not require an Unfunded Mandates Act analysis). This rulemaking is significant under Executive Order 12866, and the Department of Transportation regulatory policies and procedures because of the substantial Congressional and public interest concerning the maintenance and roadability of intermodal container chassis and the responsibilities of intermodal equipment providers.

1.3.1 Regulatory Alternatives Considered

The goal of this rulemaking is to reduce crashes caused by unsafe intermodal chassis by providing added oversight to ensure that the intermodal container chassis used by motor carriers to transport intermodal cargo containers from seaports and rail yards are in safe and proper working order. In developing the rulemaking, FMCSA considered the following two alternatives:

- Do Nothing.
- Amend the FMCSRs to add an explicit reference to intermodal equipment providers so they could be subject to the same enforcement proceedings, orders and civil penalties as motor carriers, property brokers, and freight forwarders and ensure that equipment providers would not only be required to comply with the "systematic inspection, repair, and maintenance" requirements under 49 CFR 396.3, but also the periodic inspection requirements under 49 CFR 396.17-396.23.

Given the intermodal equipment roadability requirements mandated in Section 4118 of SAFETEA-LU, as well as the direction included in Section 4118 requiring the Department of Transportation to issue roadability regulations within one year of the enactment of SAFETEA-LU, FMCSA believes that it is necessary and appropriate to pursue a Federal rulemaking. Therefore, the "Do Nothing" alternative is not viewed by FMCSA as a viable alternative and is not developed further in this regulatory evaluation.

1.3.2 Policy Issues Spurring Proposed Regulatory Change

As mentioned earlier, the purpose of this rulemaking is to (i) ensure that intermodal equipment operating in interstate commerce on the Nation's highways is safe (ii) reduce the likelihood of crashes attributable in whole or in part to the mechanical condition of intermodal equipment offered by equipment providers to motor carriers, without unnecessarily involving the agency in the commercial relations or allocation of liability between intermodal parties, and (ii) ensure that intermodal equipment defects and deficiencies are reported and addressed and that citations for safety violations are assessed upon the appropriate responsible entity.

Three key public policy issues have spurred the proposed FMCSA rulemaking on intermodal equipment safety: (1) the need to ensure the safety of chassis on the Nation's highways, (2) the need to have a consistent set of regulations applied throughout the U.S., and (3) enactment of SAFETEA-LU.

First and foremost is the safety concern for intermodal equipment operated on public highways. This, of course, directly follows from DOT's strategic safety goal: "Enhance public health and safety by working toward the elimination of transportation-related deaths and injuries."²¹

The second issue is consistency between Federal and State safety regulation of intermodal equipment. Federal regulation is generally preferable to address interstate commerce issues; this is especially important in this case since an efficient intermodal transportation can facilitate U.S. participation in global markets.²²

The third issue was fully discussed in Section 1.2.2 and will not be discussed again here.

To ensure that all three issues are addressed, explicitly or implicitly, the proposed rulemaking includes a number of amendments to the FMCSRs.

²¹ Department of Transportation, Strategic Plan, 2003-2008, available on the Internet at www.dot.gov/stratplan2008/strategic_plan.htm#_Toc52257032.

²² OMB's Guidance to Federal agencies on the development of regulatory analysis - Circular A-4 (September 2003).

1.3.3 Inspection Frequency

As noted earlier, 49 CFR Sections 396.17-396.23 currently require a periodic inspection of intermodal equipment by the controllers of that equipment. In its survey research and industry discussions conducted prior to preparation of this evaluation, FMCSA made a preliminary determination that non-motor carrier intermodal equipment providers appear to be performing periodic inspections at least once every 12 months, as required under Section 396.17(c). However, FMCSA researchers concluded there was considerable uncertainty as to whether entities that control intermodal equipment (whether trucking companies, steamship line, railroad, or other) are complying with the current systematic inspection, repair, and maintenance requirements for those pieces of equipment tendered to the trucker by a non-motor carrier equipment provider. Consequently, the proposed rule would indirectly result in some equipment providers being required to establish a systematic inspection, maintenance and repair program, which would result in additional inspections being conducted on intermodal chassis beyond the annual inspection.

1.3.4 Data

The analysis presented here is based on data and other information obtained from a variety of sources, including FMCSA's Motor Carrier Management Information System (MCMIS) database. One important source of information was FMCSA's intermodal surveys.

In 2004, FMCSA undertook three separate intermodal surveys covering the chassis operations of trucking firms, railroads, and steamship lines in calendar year 2003: (1) "Survey of Intermodal Trucking Firms: Assessment of Current Intermodal Chassis Operations," (2) "U.S. Rail-to-Truck Intermodal Facility Survey: Assessment of Current Intermodal Chassis Operations," and (3) "U.S. Intermodal Equipment Provider Survey: Assessment of Current Intermodal Chassis Operations at U.S. Ports."²³

The survey questionnaires addressed issues such as (1) the number of intermodal chassis under the respondent's control, (2) inbound and outbound roadability inspections of chassis, (3) annual inspections of intermodal chassis, (4) preventative maintenance of chassis, (5) time/cost of inbound and outbound chassis inspections, (6) results of annual inspections and maintenance checks, and (7) additional comments from the respondents. Supplemental questions were provided to intermodal trucking firms. Those questions asked additional questions relating to intermodal chassis operations and provided a clarification for one of the questions in the original survey instrument.

Questionnaires were provided by FMCSA to three organizations: (1) the Association of American Railroads (AAR), (2) the American Trucking Associations (ATA), and (3) the Ocean Carrier Equipment Management Association (OCEMA). For each of these separate surveys, the associations were directed to provide the questionnaire to nine or fewer entities in accordance with Office of Management and Budget (OMB) guidance.

²³ Analysis Division, FMCSA, 2004.

AAR received and summarized information from three railroads, which were responsible for a total of 55,328 chassis in 2003. Those chassis were owned, term-leased, or drawn from chassis pools by the railroads and tendered to truckers. Of those chassis, 55,209 were reported to have traveled an average of 10,334 miles per chassis during 2003 (information on the average distance traveled by the remaining chassis was not available). Overall, the 3 railroads reported spending a total of approximately \$75 million on inspection, maintenance, and repair of their intermodal chassis in 2003.

OCEMA's collected and summarized information from seven steamship lines that had a total of 227,548 chassis in 2003. As with the railroads, those chassis were owned, term-leased, or drawn from chassis pools by the steamship lines and tendered to motor carriers. Of those chassis, 225,748 were reported to annually travel between 3000 and 5000 miles, with the average being 4500 miles per chassis (information on the travel of the remainder was not available). Overall, the 7 steamship lines reported spending approximately \$156.5 million on inspection, maintenance, and repair of their intermodal chassis in 2003.

ATA provided information from nine trucking firms, of which only three owned or otherwise controlled chassis. Those three trucking firms had a total of 65 chassis that were owned and operated in 2003. Those chassis are reported to have traveled an average of approximately 34,000 miles per year. The average length of haul for the intermodal chassis transported by the 9 trucking firms in 2003 varied from 11-20 miles to 150-200 miles. The importance of intermodal container movements to the operators, measured as the percentage of revenue in 2003 generated by those movements, varied, with the majority reporting that intermodal container movements generated over 60 percent of the revenue received in 2003. Most of the operators reported that they incurred uncompensated repair costs in 2003 to repair chassis tendered by chassis providers (this does not include compensated repair costs or costs to the operator's own chassis). For the reporting operators, these uncompensated costs varied from \$0 to \$500 per chassis.

2 Economic Analysis

As stated previously, FMCSA is proposing to make the following changes to the FMCSRs:

- Add an explicit reference to intermodal equipment providers so they would be subject to the same enforcement proceedings, orders and civil penalties as motor carriers, property brokers, and freight forwarders.
- Require that equipment providers submit completed Motor Carrier Identification Reports, as well as mark their intermodal equipment with USDOT identification numbers.
- Ensure that equipment providers are held accountable for the safe and proper working condition of their intermodal equipment.

- Require intermodal equipment providers to establish a systematic inspection, repair and maintenance program and to maintain records documenting the program.
- Provide a means for motor carriers and drivers to report unsafe chassis conditions to the equipment providers.
- Identify a specific list of intermodal equipment items or components that the driver is responsible for inspecting and determining are in good working order before operating the intermodal equipment.
- Require that facilities at which an intermodal equipment provider regularly makes intermodal equipment available for interchange have an operational process and space readily available for a motor carrier to have any identified equipment defects repaired or the equipment replaced prior to departure.
- Prohibit intermodal equipment providers from placing intermodal equipment in service on public highways when the providers or their equipment are found to pose an imminent hazard.

2.1 Background

FMCSA's primary mission is to reduce crashes, injuries, and fatalities involving commercial motor vehicles, that is, large trucks and buses. In carrying out its safety mandate, FMCSA balances safety concerns with industry efficiency²⁴ by identifying and targeting high-risk equipment owners and operators in enforcing the safety regulations. As with all commercial motor vehicle and support equipment operations, the safety, reliability and maintainability of intermodal container chassis is critical to ensuring safe commercial intermodal transportation on the public highway system.

2.1.1 Crashes involving intermodal equipment

In 2004, according to the GES data, it is estimated that there were roughly 140,000 reportable crashes involving large trucks with injuries, fatalities, or vehicles towed away. It is estimated that 7,391 of these large truck crashes (or 5.3 percent) may have involved mechanical defects or deficiencies on the truck as contributing factors. Collectively, these crashes accounted for an estimated 217 fatalities and 7,418 injuries. The crashes break out by type, as follows in Table 1:

Preliminary results of the Large Truck Crash Causation study also indicated that most commercial crashes are not the result of mechanical defects or deficiencies in vehicle components. Vehicle component defects or deficiencies apparently caused only about four percent of the total reported large truck crashes evaluated by that study.²⁵ Consistent with this result, 2002-2003 data from the Statewide Integrated Traffic Records System (SWITRS) in California indicates that 36 out of 953 crashes involving intermodal container chassis (3.8 percent of the total) were reportedly caused by equipment or

²⁴ See "FMCSA's Strategy" at www.fmcsa.dot.gov/about/what-we-do/strategy/strategy.htm.

²⁵ "Large Truck Crash Causation Study," a presentation by Dr. Ralph Craft, FMCSA, at the 2004 Traffic Records Forum, July 2004.

vehicle component failure. However, interestingly, the SWITRS data indicated that intermodal chassis equipment defects caused 3.8 percent of the truck crashes in which chassis were involved, while non-intermodal trailers were estimated to cause 1.1 percent of truck crashes in which they were involved.

Table 1. Types of Crashes with Contributing Vehicle Defects

Crash Type	Number	Percent
Fatal Crashes	177	2.4
Injury Crashes Without Fatalities	3,675	49.7
Tow-Away Only Crashes	3,539	47.9
2004 Reportable Crashes w/Contributing Vehicle Defects	7,391	100.0

Note: For each crash record within the National Highway Traffic Safety Administration's (NHTSA) General Estimates System (GES) database, the investigator attempts to assess whether there were mechanical defects or deficiencies that might have contributed to the cause of the crash. When a defect or deficiency is found to have potentially existed, an effort is then made to identify the pertinent defect category: tires, brake system, steering system, and suspension. These data are recorded in the GES under "Vehicle Contributing Factors" (Code V12).

Source: FMCSA analysis of FARS and GES databases, July 15, 2004.

Given that there are approximately 850,000 container chassis in use in the United States, FMCSA believes it is highly likely that large truck crashes have resulted from mechanical deficiencies on intermodal chassis.²⁶ Additionally, FMCSA's roadside inspection data indicates that intermodal chassis are typically in worse mechanical condition than other types of commercial motor vehicles. These data are discussed extensively in the next section.

2.1.2 Intermodal Equipment Out-of-Service (OOS) Rates

To assess the condition of intermodal container chassis in the U.S., FMCSA requested that the states conduct inspections of intermodal equipment, where possible and appropriate, as part of the focus of International RoadCheck 2004, conducted in June 2004, the seventeenth annual inspection effort.²⁷ This inspection data was collected and compiled by FMCSA. Additionally, FMCSA obtained inspection data from four states (California, Louisiana, South Carolina, and Texas) during the period 2000 to 2003. These four states currently identify intermodal semi-trailers in their inspection records. Table 2 shows the inspection totals and out-of-service (OOS) rates for the International RoadCheck 2004 inspections and for inspections by the four states with implemented chassis roadability legislation. Although FMCSA collects both violation and out-of-

²⁶ FMCSA, "Inspection, Repair and Maintenance Requirements for Intermodal Container Chassis Equipment Providers: Final Rulemaking Support Paper for a Notice of Proposed Rulemaking," RIN 2126-AA86, p. 4.

²⁷ Detailed analysis of the RoadCheck Inspection Data collected in MCMIS is provided in this Docket.

service rates, it is the out-of-service rate that the agency is most concerned about, because that rate is based on the most serious safety violations, and those violations are the ones that are most likely to cause a crash or to cause the vehicle to experience a breakdown while in operation.²⁸

Table 2: Comparison of Non-intermodal vs. Intermodal Out-Of-Service (OOS) Rates

Inspection Data Source	Non-Intermodal			Intermodal		
	Number of Inspections	OOS Rate (%)		Number of Inspections	OOS Rate (%)	
		Tractors	Semi- trailers		Tractors	Semi- trailers
RoadCheck Inspections	312,751	11.3	18.0	4,038	17.3	22.1
Four State Inspections	1,114,029	13.7	14.7	37,615	16.4	18.3

Note: RoadCheck inspections data are cross-section data obtained from 38 States from June 1 through September 23, 2004, except for California where data had been collected from June 1 to 23, only. Four State inspection data were time-series data collected from 2000 through part of 2003 in California, Texas, South Carolina, and Louisiana.

Table 2 shows that the OOS rates for intermodal tractors are consistently higher than the OOS rates for non-intermodal tractors. This is true for the Road-Check data and for the Four-State data, respectively. Moreover, Table 2 also shows that the OOS rates for intermodal semi-trailers are consistently higher than the OOS rates for non-intermodal semi-trailers (again, this true for both data sets). Based on statistical tests comparing two population proportions, each of the four *corresponding* differences in OOS rates between non-intermodal and intermodal equipment in Table 2 is statistically significant at a level of 0.002.

The safety and roadside inspection data suggest that the percentage of intermodal chassis being operated in unsafe mechanical condition is likely to be greater than the percentage of non-intermodal trailers found to be in unsafe operating condition. While the number of violations cited per inspection for intermodal container chassis may be comparable to the number of violations per inspection of non-intermodal trailers, the 2004 Roadcheck and Four-State inspection data extracted from the Motor Carrier Management

²⁸ In accordance with Section 396.9 of the FMCSRs, "authorized personnel shall declare and mark "out of service" any motor vehicle which by reason of its mechanical condition or loading would likely cause an accident or a breakdown." Commercial vehicle violations and out-of service criteria are listed in the Commercial Vehicle Safety Alliance's North American Uniform Out-of-Service Criteria, which is used by Federal, State, and provincial agencies in the United States, Canada, and Mexico.

Information System (MCMIS) indicate that the defects or deficiencies observed on intermodal container chassis are likely to be more severe than those noted on non-intermodal semi-trailers (as determined by the difference in OOS rates). *Therefore, it appears intermodal container chassis are, as a group of commercial vehicles, more likely to be in need of repairs than other types of semi-trailers, and that many of their defects and deficiencies are more likely to be of the types that are likely to cause a crash or breakdown of the vehicle.*

As part of the RoadCheck 2004, FMCSA also asked inspectors to identify the ownership of intermodal chassis at the time of the vehicle inspection.²⁹ Table 3 summarizes OOS rates by chassis ownership.

Table 3: Intermodal Out-of-Service (OOS) Rate by Type of Chassis Ownership

Type of Chassis Owners	Number of Inspections	Tractors		Semi-trailers/Chassis	
		Number of OOS Inspections	OOS Rate (%)	Number of OOS Inspections	OOS Rate (%)
Motor Carrier	94	21	22.3	16	17.0
Leased	191	45	23.6	54	28.3
Shipper	167	41	24.6	33	19.8
Railroads	68	21	30.9	20	29.4
Unknown	150	17	11.3	47	31.3
Total	670	145	21.6	170	25.4

In Table 3, inspection results are segregated by type of chassis ownership. From this data, it appears that chassis controlled by motor carriers are better maintained than chassis offered to motor carriers by equipment providers. That is, the data appear to show that intermodal semi-trailer chassis owned by motor carriers have a lower OOS rate than the OOS rate of intermodal semi-trailer chassis for any other ownership type. However, because of the small number of inspections involved (which results in large standard errors around the means or averages), these observed differences are not statistically significant.

²⁹ Volpe Center, "Feasibility Study on Collecting Intermodal Chassis Crash and Inspection Data," prepared for FMCSA, September 29, 2004

2.1.3 Liability

Currently, the insurance liability for chassis being transported by road is generally covered under the policies of motor carriers.³⁰ This assignment of responsibility does not encourage non-motor carrier equipment owners to place a high priority on maintenance. Rules that make responsibility of this equipment more burdensome for steamship lines may encourage them to try to shift ownership of intermodal chassis to motor carriers or to third parties. Although in the U.S. steamship lines currently own or lease (long term) the majority of the intermodal chassis, ownership of this equipment in other countries is concentrated in trucking firms.

The characteristics of the intermodal market are complicated, and ownership of equipment and the responsibility for properly maintaining it do not always coincide. While motor carriers could charge the railroads, shipping lines, and third party equipment providers fees for the delays needed to obtain a roadworthy chassis or for repairing a damaged chassis, they operate in a highly competitive and fragmented market where small motor carriers and individual owner/operators seldom have the market power to demand that the equipment provided to them is roadworthy. The importance of relative market power is evident in certain geographical areas, where a motor carrier with enough market leverage can demand roadworthy chassis, report maintenance problems to equipment providers, and simply move to the next piece of equipment in line when offered a chassis that is not roadworthy.³¹ In many other areas, however, it has been reported that equipment providers have enough market power that they generally can choose to do business with motor carriers that cannot risk turning down unsafe chassis. Port authorities could seek to impose these requirements, but they compete with other ports for the business of the steamship lines. Maritime terminal operators do have antitrust immunity to meet and coordinate activities and service prices. It would thus be possible for them to collaborate to impose rules for the purchase of drayage services in ports, although there is no indication that they are currently doing this.

According to a study³² of the safety performance of trucking industry by commodity segment, intermodal trucking operations were found to be average or better than average in six of the nine safety performance measurements used by FMCSA in its SAFESTAT scores.³³ In the two measurements relating to vehicle condition, however, the intermodal

³⁰ There are two liability issues that related to intermodal chassis. The first is the liability for crashes involving intermodal chassis. The second is the liability for damage to chassis due to improper handling.

³¹ Comments from members of American Trucking Associations (ATA) in response to certain intermodal equipment maintenance, repair, and operational questions posed by FMCSA in 2004 to the Ocean Carrier Equipment Management Association (OCEMA), the Association of American Railroads (AAR), and the ATA.

³² Motor Carrier Industry Profile Study Evaluating Safety Performance by Motor Carrier Industry Segment; Thomas Keane, FMCSA Analysis Division, Dr. Thomas Corsi of the University of Maryland, College Park, and Kristine N. Braaten of Econometrica, Inc. Proceedings, of the International Truck & Bus Safety Research & Policy Symposium, Center for Transportation Research at the University of Tennessee on April 3-5, 2002 in Knoxville, Tennessee.

³³ SafeStat (Safety Status Measurement System) is an automated analysis system developed for the Federal Motor Carrier Safety Administration (FMCSA). The system combines current and historical safety performance data to measure the relative safety fitness of interstate commercial motor carriers. SafeStat

sector ranked poorly. Specifically, intermodal operations ranked last for vehicle safety condition and second-to-last (tenth) for accumulating vehicle out-of-service violations.

Currently, five states (California, Illinois, Louisiana, New Jersey, and South Carolina) have passed roadability legislation, while Virginia has established a roadability dispute resolution process in lieu of legislation. (FMCSA, as mentioned previously, obtained inspection data on intermodal chassis from three of these states, as well as from Texas.) While there are advantages to leaving regulatory issues to State authorities, a diversity of rules, and especially the absence of rules in many states with port or railroad intermodal terminals, may encourage more market fragmentation, undermining the operational efficiency needed for the success of the intermodal transportation system nationally. Therefore, Federal regulation is more appropriate to address the interstate commerce issues relating to intermodal chassis roadability, especially when it promotes our Nation's economic competitiveness by improving essential intermodal transportation linkages.

2.2 *Number of Affected Entities*

As stated before, the proposed rule would affect entities that tender intermodal equipment (generally chassis) to motor carriers. These entities own or lease container chassis that are currently subject to FMCSA's jurisdiction based on the statutory definitions of "commercial motor vehicles," "employees" and "employers" found at 49 U.S.C. 31132. A container chassis is a specialized semitrailer with integral locking mechanisms used to secure an intermodal container. An intermodal container chassis is a reusable asset of its owner. That ownership can belong to virtually any participant in the transportation or logistics scene:

- Carriers, including ocean shipping lines, railroads, and trucking companies,
- Equipment leasing companies, and
- Shippers or freight forwarders.

This evaluation estimates that there are 108 non-motor carrier intermodal equipment providers, consisting of 93 steamship lines, 5 railroads, and 10 chassis pool operators.³⁴

According to the Intermodal Association of North America (IANA), there are 5,500 motor carriers and 65 equipment providers who are signatories to the Uniform Intermodal Interchange and Facilities Access Agreement (UIIA), representing approximately 90

enables the FMCSA to quantify and monitor the safety status of motor carriers and guides the deployment of resources to focus on carriers posing the greatest safety risk. SafeStat evaluates the relative safety status of individual motor carriers with respect to the rest of the motor carrier population in four analytic Safety Evaluation Areas (SEAs): Accident, Driver, Vehicle, and Safety Management. The system uses up to 30 months of motor carrier safety and normalizing data to develop measures and indicators in the four SEAs. The four SEA values are then combined into an overall safety status assessment, known as a SafeStat score.³⁴ The number of unique equipment providers is estimated from information in the *Containerization International Yearbook 2004* for 99 port terminals in the United States. The number of steamship lines is estimated from the direct call liner services at the terminal level.

percent of the intermodal movements.³⁵ Furthermore, MCMIS contains information on the motor carriers that identify themselves on the Motor Carrier Identification Report (FMCSA Form MCS-150) as engaging in intermodal operations only, as well those that include intermodal operations as one of their primary operations, and all other motor carriers. As stated, the MCMIS database indicates that there are 12,032 motor carriers that included intermodal cargo as one of the cargo types they may carry.

Given that according to the IANA database about 5,500 motor carriers are signatories of UIIA, this analysis assumes that about 46 percent of the 12,032 motor carriers in MCMIS, or about 5,600 motor carriers, are engaged in intermodal cargo container operations as a primary operation. Only some of these carriers own or otherwise control (i.e., lease) intermodal container chassis or trailers, however. In response to FMCSA's survey questionnaire regarding operational characteristics of intermodal tractor-trailers three out of nine motor carriers (or one-third), suggested that they owned, leased, or otherwise controlled intermodal container chassis for extended periods of time (i.e., beyond trip leases). Therefore, FMCSA assumes that one-third of the 5,600 motor carriers engaged in intermodal cargo container operations, or about 1,900 motor carriers, actually own (or have long-term control of) intermodal container chassis.

Table 4: Estimated Number of Affected Entities

Description of Entities	Estimated Number of Affected Entities
Steamship Lines	93
Railroads	5
Common-pool operators/Equipment Lessors	10
Motor Carriers	1,900
Total	2,008

It is difficult to obtain precise estimates of the size and scope of national intermodal chassis operations. There is no census of intermodal chassis providers that is comparable to the FMCSA's MCMIS Census File of motor carriers, which provides not only the name and location of each motor carrier, but also its size, as measured by the number of power units. Therefore, Table 4 was estimated using a combination of MCMIS, IANA, and ATA information, as well as information obtained from port authority and railroad web sites.

2.3 Number of Intermodal Chassis

³⁵ http://www.intermodal.org/Assn_Initiatives.html

Information on the number of intermodal chassis owned by the various equipment owners/providers is as difficult to obtain as the number of intermodal chassis providers. The November 10, 2003, issue of *Transport Topics*, published by the American Trucking Associations, put the current number of intermodal chassis in service at 800,000. The January 12, 2004 issue, however, put the total at 750,000. To be conservative, this evaluation estimates that there are approximately 850,000 intermodal chassis currently in operation in U.S.³⁶

According to the Institute of International Container Lessors (IICL) Annual Chassis Fleet Survey,³⁷ IICL members owned approximately 320,000 chassis in 2004.³⁸ According to the IICL, member companies own almost 40 percent of the world's chassis, and they own and lease a high percentage of the U.S. chassis fleet.³⁹ Based on the IICL data on intermodal chassis, the estimated 10 chassis pool operators are assumed to own 320,000 chassis, or about 38 percent of the total domestic fleet. Therefore, this analysis assumes that steamship lines, railroads, and motor carriers currently own approximately 530,000 intermodal chassis in operation in U.S.

As stated previously, approximately 1,900 motor carriers are expected to own chassis. Information obtained by FMCSA about motor carriers indicates that the average fleet size for these 1,900 is 22 intermodal chassis per motor carrier. Thus, motor carriers are estimated to own approximately 41,800 intermodal chassis. This analysis assumes that steamship lines and railroads own the remaining 480,200 chassis.

From the Ocean Carrier Equipment Management Association (OCEMA) and AAR, FMCSA obtained information on approximately 282,900 intermodal chassis owned by members of these two groups.⁴⁰ This represents 33 percent of the estimated 850,000 chassis currently in operation in the U.S. and 59 percent of the estimated 480,200 chassis owned by the steamship lines and railroads. Of the 282,900 chassis accounted for in the FMCSA survey, the steamship lines are assumed to own approximately 80 percent, and the railroads are assumed to own approximately 20 percent. For the purposes of this analysis, the steamship lines are assumed to own 80 percent of the 480,200 chassis, or approximately 392,000 intermodal chassis, while the railroads are assumed to own 20

³⁶ This evaluation acknowledges that there may be a number of intermodal semi-trailers that would be affected by the proposed regulation. Since the precise number of intermodal semi-trailers is unknown, this evaluation assumes that the estimated 850,000 intermodal chassis include intermodal semi-trailers as well.

³⁷ See www.iicl.org/PDF%20Docs/16thFleetSurveyChassis.pdf.

³⁸ According to communications with Henry White, Jr., IICL, April 6, 2005, the reporting lessors include all major lessors. There may be a couple of minor lessors that are not included, but the number of chassis that they possess is small. According to the IICL fleet survey report, the number of chassis owned/controlled by non-member respondents to the survey is also relatively small. IICL, it should be noted, is an international organization, and some of the chassis owned/operated by its members are not operated in the U.S.

³⁹ See www.iicl.org/members.htm.

⁴⁰ In 2004, FMCSA requested information on chassis ownership and operations from the Ocean Carrier Equipment Management Association (OCEMA), the Association of American Railroads (AAR), and the American Trucking Associations (ATA). OCEMA provided FMCSA summary information obtained from 7 out of 18 major ocean common carriers; AAR provided summary information obtained from 3 of the 5 railroads owning chassis; and ATA provided the responses of 11 motor carriers.

percent of the 480,200 chassis, or approximately 96,200 intermodal chassis. Table 5 shows the estimated number of chassis by owner category for all owners.

Table 5: Estimated Number of Intermodal Chassis by Owner

Chassis Owner	Estimated Number of Affected Entities	Estimated Number of Chassis
Steamship Lines	93	392,000
Railroads	5	96,200
Common-pool operators/Equipment Lessors	10	320,000
Motor Carriers	1,900	41,800
Total	2,008	850,000

Note: The estimated number of intermodal chassis includes intermodal semi-trailers for the purpose of this evaluation.

2.4 Compliance Costs

Potential costs considered as a result of the proposed rule include:

- Filing a Motor Carrier Identification Report (FMCSA Form MCS-150),
- Displaying a USDOT identification number on each chassis,
- Establishing a systematic inspection program, and a repair and maintenance program to ensure the safe operating condition of each chassis,
- Maintaining documentation of the inspection program, and
- Establishing a new reporting system for defective and deficient equipment.

In the sections that follow, each of the potential cost items is discussed in detail.

When considering the costs of the proposed rule, it should be recognized that some of those costs are already being incurred by industry. For example, as mentioned previously, periodic inspections of intermodal equipment by those controlling that equipment, called for by 49 CFR Section 396.17(c), are apparently being performed at least once every 12 months, as required. Additionally, as will be presented later in the discussion of inspection, repair and maintenance costs, surveys of steamship lines and railroads that are also intermodal equipment providers (IEPs) indicate that at least some of those providers are engaging in regular repair and preventative maintenance, as well as in various inspection activities. Furthermore, information from motor carriers indicates that some are currently doing limited repair and maintenance work on the chassis that intermodal equipment providers tender to them. Therefore, the costs of this rule are lower than they would be if IEPs were not performing any inspections, repairs, or maintenance.

2.4.1 Costs Associated with Filing an Intermodal Equipment Provider

Identification Report (MCS-150C)

In accordance with the FMCSRs, motor carriers are required to file a Motor Carrier Information Report (MCS-150) with FMCSA before they begin to operate, and to file an update of the report every 24 months. The proposed rule would require each intermodal equipment provider to obtain a unique USDOT number by submitting a MCS-150C (a variant of the Form MCS-150) to FMCSA and to file an update of its initial report every 24 months. As the agency responsible for implementing and enforcing FMCSRs, FMCSA must be advised of the characteristics of the individual equipment providers to ensure proper safety oversight of the regulated community. The MCS-150 is a single-page form that asks for basic information, such as name, address, telephone number, and numbers and types of equipment. FMCSA estimates that it takes 20 minutes to complete the MCS-150C the first time that it is filed.⁴¹

The Bureau of Labor Statistics' (BLS) National Compensation Survey (NCS) estimates (i) wages and salaries and (ii) benefits as two principal components of employee compensation.⁴² According to the NCS, employer costs per hour worked for employee compensation in the transportation and public utilities industry is \$30.34, of which 68.5 percent, or \$20.77, is estimated as wage and salary and 31.5 percent, or \$9.57, is estimated as benefits. This evaluation assumes that a supervisor or manager would be responsible for filing a MCS-150C. According to the national employment and wage data from the Occupational Employment Statistics survey published by the BLS, a first line supervisor/manager in a transportation and material moving occupation on average earned \$22.58 per hour in 2003, with a median salary estimated at about \$21.08 per hour. Therefore, total compensation for a supervisor/manager responsible for filing a MCS-150C is estimated at \$30.79 per hour of which \$21.08 is the wage and salary and \$9.71 are the benefits.

Based on the foregoing wage estimates, this evaluation estimates that the equipment providers would incur a one-time cost of approximately \$10.27 per entity (1/3 hour times \$30.79), or about \$1,110 for the 108 (non-motor carrier) entities in the industry that do not already have USDOT numbers. Since a USDOT number is good for all of a company's vehicles, the estimated 1,900 motor carriers that own intermodal chassis would not incur any additional expense under the proposed rule. In accordance with the Motor Carrier Safety Improvement Act of 1999, motor carriers and other entities must update their information every 2 years. FMCSA estimates that the biennial update would take considerably less time than the original submission, since most of the information is likely to be the same, and equipment providers would already have had the experience of completing the form at least once before. For the purposes of this analysis, the biennial update is estimated to take 10 minutes.⁴³ Therefore, in addition to the one-time filing

⁴¹ FMCSA, Motor Carrier Identification Report, *Federal Register*, Volume 65, No. 227, November 24, 2000.

⁴² Benefits include paid leave, supplementary pay, insurance, retirement and savings, as well legally required items, such as social security, workers' compensation, etc.

⁴³ The estimated time requirements to fill out an MCS-150 for the first time and biennially are consistent with FMCSA's estimate of the time it takes motor carriers to fill out an MCS-150.

cost, equipment providers would also incur a recurrent charge of \$5.13 per entity biennially. Note that motor carriers are already required to file the MC-150 form, so they would not incur any new costs associated with this aspect of the proposed rule.

Table 6: Costs of Filing a Motor Carrier Identification Report (MCS-150)

Provider	No. of Entities	Existing Costs	Additional Costs due to the NPRM	
			Initial Costs	Total Recurring Costs (Years 2-10)*
Steamship Lines	93	None	\$955	\$1,618
Railroads	5	None	\$52	\$88
Common-pool operators	10	None	\$103	\$173
Motor Carriers	1,900	\$19,502	\$0	\$0
Total	2,008	\$19,502	\$1,110	\$1,880

*Net present value over a 10-year period using a 7 percent discount rate.

2.4.2 Costs Associated with Displaying a Unique Identification Number on Each Chassis

The proposed rule would require all equipment owners to mark their chassis with a unique identification number (i.e., USDOT number or other identifier) that is assigned to those filing a MCS-150C. FMCSA does not mandate a particular method of vehicle identification, and therefore, the costs associated with this proposal would vary depending on the method used to mark the chassis. FMCSA assumes that the vast majority of the equipment providers would use either stencils or decals for marking, since these are the least expensive methods.⁴⁴ FMCSA has estimated that material costs for marking a chassis with a DOT number and business name decreases with increasing fleet size; that is, marking for smaller motor carriers (i.e., less than 6 units) is estimated at \$20 per unit, while marking for carriers with more than 20 units in their fleet is estimated at approximately \$10 per vehicle. The material costs decrease to approximately \$2.50 per vehicle for a carrier with a fleet of more than 1,000 units. The proposed rule would affect equipment providers of intermodal chassis only, and this evaluation assumes the material costs associated with marking of intermodal chassis would average approximately \$6.25 per chassis.⁴⁵

FMCSA estimates that the average time to affix a unique identification number would be about 12 minutes. According to national employment and wage data from the

⁴⁴ This assumption and following assumptions on time and material requirements for chassis marking are consistent with FMCSA's Final Rulemaking analysis for Commercial Motor Vehicle Marking published in the *Federal Register*, Volume 65, No. 107, June 2, 2000.

⁴⁵ The \$6.25 estimate is the average of \$2.50 and \$10.00. We assume that there would a negligible number of equipment providers owning fewer than 6 chassis. Therefore, the highest material cost, \$20 per unit was not used in this analysis. The Agency acknowledges that the estimated chassis marking cost of \$6.25 per chassis is conservative and probably over-estimates the costs of compliance.

Occupational Employment Statistics survey, the mean wage of a painter of transportation equipment is \$17.56 while the median hourly wage rate is \$16.39. Using the median hourly wage rate with a 31.5 percent benefits package (see above), the associated labor cost of marking an intermodal chassis is estimated to be \$4.79 per chassis.

The labor and material costs associated with marking one intermodal chassis with a identification number is expected to be \$11.04 per chassis (\$6.25 for material, and \$4.79 for labor). The proposed rule would require all operational chassis to be marked at a cost of \$11.04 per chassis. This represents the initial cost of marking chassis. Subsequently, every year thereafter, a portion of the chassis will be retired and replaced by new chassis, which will need to be marked. FMCSA believes that the operational life of a chassis is 14 years. Consequently, for the purposes of this analysis, it is assumed that 1/14th of the chassis fleet is retired and replaced annually. Table 7 shows the estimated costs of the marking requirement by owner type. Since the marking requirement only covers intermodal equipment "interchanged or offered for interchange" to a motor carrier, FMCSA's understanding (based on docket comments, stakeholders, and other knowledge) that motor carriers that own their own chassis do not tender them to others, so motor carriers do not incur any additional costs as a result of this requirement. The estimated total present value of the cost of chassis marking over a 10-year period is expected to be \$12,803,153 (= \$8,922,528 + \$3,880,625).

Table 7: Estimated Cost of Chassis Marking

Owner Type	Entities	Total No. of Chassis Controlled ⁴⁶	Existing Costs	Additional Costs due to the NPRM	
				Initial Costs	Total for Recurring Costs (Years 2-10)*
Steamship lines	93	392,000	None	\$4,327,680	\$1,882,232
Railroads	5	96,200		\$1,062,048	\$461,886
Common-pool operators	10	320,000		\$3,532,800	\$1,536,507
Motor carriers	1,900	41,800		0	0
Total	2,008	850,000		\$8,922,528.00	\$3,880,625.00

*Net present value over a 10-year period using a 7 percent discount rate.

⁴⁶ This term "controlled" is loosely defined here as those chassis owned or leased (long term) by the entity and for which they have responsibility or decision-making authority over maintenance.

2.4.3 Costs Associated with Systematic Inspection, Repair, and Maintenance (IRM) Programs

Background

As noted earlier, current regulations (49 CFR 396.17) require controllers of intermodal equipment to conduct periodic or annual inspections on the equipment. Some studies have provided statistical evidence that more frequent periodic motor vehicle inspections (PMVIs) reduce crashes.⁴⁷ Additionally, the American Association of Motor Vehicle Administrators (AAMVA)⁴⁸ and trade groups (such as IANA⁴⁹), and many analysts, support the notion that more frequent PMVIs do indeed reduce crashes. As such, there is conceptual, analytical, and anecdotal support for the cost effectiveness of establishing regularly scheduled inspection, maintenance and repair programs for commercial vehicles.

In addition to the periodic (or annual) inspection requirements, §§ 392.7, 396.11 and 396.13 of the FMCSRs currently require commercial drivers to perform a pre-trip and post-trip vehicle inspection. Drivers are required to evaluate vehicles' components and note any defects or deficiencies. The defects must be repaired prior to vehicle's use. These pre-trip and post-trip inspections are applicable to intermodal chassis.

Also, in accordance with § 396.3, every motor carrier is required to systematically inspect, repair, and maintain, or cause to be systematically inspected, repaired, and maintained, all motor vehicles subject to its control. The parts and accessories for those motor vehicles are required to be in safe and proper operating condition at all times. These include those components specified in Part 393 and any additional parts and accessories that may affect safety of operation, including but not limited to frame and frame assemblies, suspension systems, axles and attaching parts, wheels and rims, and steering systems. However, with regard to intermodal chassis in particular, motor carriers have claimed that since they do not own or control most of the intermodal chassis currently operating in the U.S. market, so they do not have possession of this equipment long enough to maintain any reasonable level of control over its systematic inspection, repair, and maintenance (IRM).

In 2004, IANA developed a detailed inspection process with guidelines that included an eight-point inspection at least once every six months, as well as every time there is a specific "trigger event" that would warrant an immediate inspection. The eight-point

⁴⁷ White's "Does Periodic Vehicle Inspection Prevent Accidents?" in the *Accident Analysis and Prevention Journal* (Vol. 18, pages 51-82), 1986; and Blows, et. al. "Does Periodic Vehicle Inspection Reduce Car Crash Injuries?" in *Aust N Z J Public Health* (Vol.27, pages 323-7), 2003, are examples of research articles using statistical analysis to assess relationships between periodic inspection and crash rates.

⁴⁸ AAMVA's website recommends PMVI and, based on 1999 NHTSA data, suggests that 12.1 percent of motor vehicle crashes in 1999 could have been avoided. See www.aamva.org/Documents/vehSafetyInspectionEffectonSafety.pdf.

⁴⁹ IANA has developed a Task Force to test a Systematic Maintenance Check (SMC) for intermodal chassis. See www.intermodal.org/Assn_Initiatives.html.

inspection (see Table 8) covers tires, brakes, lights, twist locks and safety locks, confirmation of registration and Federal/State inspection stickers, wheel hub lubrication, the application of a dated Systematic Maintenance Check (SMC) inspection sticker, and a visual inspection of the trailing equipment frame. Nine steamship lines at the Port of Baltimore conducted a pilot implementation of the SMC program in 2004. Although anecdotally it has been reported that the pilot was considered a success, and four of the original nine pilot program participants are still following the guidelines, it has not been adopted nationwide by IANA members.

Proposed Requirement

The proposed rule would explicitly require that intermodal equipment providers comply with the "systematic inspection, repair, and maintenance" requirements of 49 CFR 396.3. These requirements do not provide specific intervals for the routine inspections, or provide inspection criteria. No specific changes are proposed with regard to the periodic or pre- and post-trip inspection requirements.

Additional Maintenance and Repair Costs

Because systematic IRM is already required under the FMCSRs, the proposed requirement will have, at most, only a limited cost impact. The maintenance and repair activities of some systematic IRM programs might need to be expanded in order to bring the programs into full compliance with the proposed requirements. For the most part, however, the only change expected is that maintenance and repair will become more proactive and less reactive. For instance, some intermodal providers currently perform preventative maintenance when driver, inbound, outbound, or roadability inspections at terminals find problems (or during the annual inspection required by the FMCSRs). The proposed rule would make the preventative maintenance of those providers more regular or time-based (for this analysis we assumed quarterly), thereby pushing necessary maintenance and repair upstream in the process and reducing the "reactive" nature of the IRM process.

There will most likely be some shift of repair costs from motor carriers to intermodal chassis providers, but the size of this shift is uncertain. However, this shift represents a transfer payment of existing costs, and therefore will not impact the overall costs or benefits of the proposed rule (note that the RIA is generally not concerned with transfer costs since they are not "new" costs resulting from the proposed rule).

For the purposes of this analysis, the proposed requirement concerning systematic IRM is assumed to have a cost of \$0.

Frequency of Inspection

As stated in the Background section above, with regard to the periodic (or annual) and pre- and post-trip inspection requirements, no changes are proposed in this rule. As such, no new costs are assumed for these existing requirements. With regard to estimating costs of the systematic IRM requirements outlined for this rule, FMCSA attempted to determine whether full compliance already existed with current regulations. It has been stated that current compliance is less than 100 percent. And, as stated, motor carriers have claimed that they should not be held responsible for the systematic IRM on chassis, since they do not typically own this equipment, and when hauling it, they control it for only very short periods. Conversely, information from the survey of steamship lines indicated that the seven respondents were fully complying with existing systematic IRM regulations. As a result of port visits and participation in roadside inspections with State officials, FMCSA analysts concluded that there was considerable uncertainty as to whether full compliance was being achieved with the existing regulations. The SAFETEA-LU settles this question by explicitly requiring that intermodal equipment providers comply with the systematic IRM requirements in CFR Part 393.3. The relevant question then becomes whether there are any new costs here, since motor carriers are already directly subject to these requirements and this proposed rule would simply transfer that responsibility to non-motor carrier equipment providers. For the purposes of the RIA, transfer costs are not relevant since they are not "new" costs, but simply existing costs shifted from one entity to another.

Guidance issued by the Office of Management and Budget (Circular A-4, September 2003) for conducting regulatory impact analyses indicates that if the agency believes that compliance with existing regulations is 100 percent, then that should represent the baseline for analyzing cost impacts of the proposed rule. However, if there is evidence that compliance is less than 100 percent, then costs to achieve 100 percent compliance with existing regulations are relevant to the evaluation (in addition to any new costs associated with explicit changes in the regulations). As such, the focus then becomes whether the costs of systematic IRM programs for chassis are already being undertaken to the extent that complies with existing regulations. While the intermodal equipment provider survey indicates that these entities are conducting such programs on their chassis, anecdotal industry information indicates that compliance with the systematic IRM requirements in the FMCSRs is currently less than 100 percent.

As such, for the purpose of estimating the economic costs of this proposed rule, FMCSA assumes that that non-motor carrier intermodal equipment providers may in fact be required to undertake new activities and thus to incur costs in order to comply with the requirements of this proposed rule. Whether or not this accurately represents the current situation, our assumption of less than full compliance in this cost analysis is conservative, in that it helps to ensure that FMCSA does not underestimate the economic costs of this proposed rule. As a result, for this analysis, FMCSA assumes that non-motor carrier equipment providers would conduct additional inspections on some portion of those

chassis under their control as a result of now being explicitly subject to the systematic IRM regulations.

Because the RIA must quantify the number of additional inspections that would be conducted each year as a result of this proposed rule, FMCSA assumes that, on average, three additional inspections would be required for a portion of the non-motor carrier owned or controlled intermodal chassis currently in operation (even though the proposed rule sets no explicit requirements on the number of inspections per chassis under a systematic IRM program). In the view of FMCSA researchers, this RIA assumption would effectively amount to a quarterly inspection program for the chassis owned or controlled by intermodal equipment providers.

The most representative example or guide of a quarterly inspection program for intermodal chassis is the Biennial Inspection of Terminals (“BIT”) Program recently initiated in California.⁵⁰ Under the BIT Program, terminal operators must perform safety inspections of their trucks, trailers, and dollies at least once every 90 days.⁵¹ Any problems that are found must be corrected and all safety inspections must be documented.⁵² The number of chassis covered by California’s BIT program is not known. Also under the BIT Program, the California Highway Patrol attempts to inspect commercial truck terminals once every two years as part of a biennial audit system. For the purposes of the BIT requirement, a terminal is essentially any facility at which a commercial truck is regularly garaged, maintained, operated from, or dispatched from.

Table 8: IANA’s Recommended Systematic Maintenance Check (SMC)

1. Tire Inspection <ul style="list-style-type: none">• FMCSA Appendix G Standards apply• Check for proper inflation, inflate to required pressure, as necessary
2. Break Inspection <ul style="list-style-type: none">• Listen for air leaks• Brake Lining check for condemning cracks and wear• Check adjustment and adjust, if necessary
3. Light Inspection <ul style="list-style-type: none">• Lens caps intact and lights functioning properly

⁵⁰ California Vehicle Code, Section 34501.12. General information on the BIT program can be found at www.chp.ca.gov/pdf/chp365g.pdf.

⁵¹ California Vehicle Code, Section 34505(a).

⁵² See “Terminal Manager’s Compliance Checklist” at www.chp.ca.gov/pdf/chp800d.pdf.

4. Twist Locks and Safety Locks Inspection <ul style="list-style-type: none"> • Operational • Ensure safety latches are working
5. Registration Confirmation <ul style="list-style-type: none"> • Ensure it is in-date and on unit • Ensure Federal and/or State inspection stickers are valid
6. Wheel Hub Lubrication Inspection <ul style="list-style-type: none"> • Visual inspection for proper lubrication, if there is an indication of a leak it must be checked and repaired if required • Oil hubs full where they exist
7. Application of the standard SMC inspection sticker with expiration date
8. Trailing Equipment Frame <ul style="list-style-type: none"> • Visual inspection of the frame and other components for cracks, welds, or other defects

Source: IANA, "Association Initiatives: Systematic Maintenance Initiative Being Tested in Baltimore," www.intermodal.org/Assn_Initiatives.html.

Current Cost of Inspection, Repair, and Maintenance

From information collected prior to this rulemaking (i.e., surveys, port visits, anecdotal information provided by industry contacts), it is FMCSA's belief that intermodal chassis providers currently have active IRM programs for their chassis. Specifically, FMCSA believes that the vast majority of providers are performing regular inbound and outbound inspections at terminals, annual inspections, and some forms of preventive maintenance, along with maintaining records on the IRM activities performed. However, there appears to be some uncertainty as to whether all intermodal equipment providers have systematic IRM programs in place. Tables 9 and 10, based on information obtained from the AAR and OCEMA by FMCSA, provide summary information on IRM activities used by some of the railroads and steamship lines that own chassis.

It is interesting to note that, as indicated in Table 10, some preventative maintenance performed by steamship lines is "event-based," in that it takes place when a chassis is undergoing repair for another reason, perhaps to replace a failed major component on a chassis:

...a thorough inspection of all components and preventive maintenance is performed at that time. Thus, most chassis are typically inspected and repaired several times per year in addition to the periodic required inspections. Because of the way chassis are used, this system is more efficient than a simple mileage or time-based preventive maintenance cycle.

For example, a chassis may leave an intermodal terminal, travel 100 miles and sit at a distribution center for the next 30 days (or more) before returning to the terminal. Thus, a straight time-based inspection cycle would likely require numerous superfluous inspections of chassis that have been used very little. Similarly, a mileage-based system is inappropriate for equipment that typically travels relatively few miles each year. The event-based concept, on the other hand, ensures that equipment being interchanged more often, and thus receiving higher usage, is being inspected and repaired more often.⁵³

The introduction of a systematic IRM program would likely shift some preventative maintenance from being event-based to time-based.

⁵³ OCEMA's response to FMCSA's intermodal survey, 2004.

Table 9: Chassis Inspection and Maintenance by Three Railroads, 2003

Type of Inspection or Maintenance	Details
Inbound and Outbound Inspections	<ul style="list-style-type: none"> • 100% of chassis receive inbound inspections from the railroads (defects are noted and chassis with defects impairing use are placed in "bad order status") • 5% of chassis receive outbound inspections from the railroads (outbound inspections are left to drivers; reported damage is recorded and repair facilities are available) • Items checked on inbound inspections: brake system – sometimes; suspension system – sometimes; frame – sometimes; tires – yes; wheels/rims – yes; lighting devices – sometimes; reflectors – sometimes; twist locks – sometimes; other (expired inspection sticker, rear underride guard, mudflaps, inflation systems, bolsters, landing legs, sand shoes, license plates) – sometimes • Cost and time for inbound inspections: 2.5 (contract personnel) to 3 minutes (own personnel) and \$6 (own personnel) to \$6.50 (contract personnel)
Annual Inspections	<ul style="list-style-type: none"> • All chassis undergo annual inspections • 50% of chassis pass annual inspection without needing to be repaired • Most common defects found: <u>Top</u>: tires, lighting devices; <u>Next</u>: brake system, twist locks, land gear • FMCSA inspection stickers are updated
Preventative Maintenance	<ul style="list-style-type: none"> • Preventative maintenance is performed on chassis • Items inspected and serviced (as needed): Brake system, suspension system, frame, tires, wheel/rims, lighting devices, reflectors, coupling devices (sometimes), twist locks; additionally, sometimes rear underride guard, mudflaps, inflation systems, bolsters, landing legs, sand shoes, inspection sticker status, license plates.
Other	<ul style="list-style-type: none"> • Inspection, maintenance, and repair records are maintained for 100% of the chassis • Records are kept electronically

Source: AAR response to FMCSA intermodal survey, 2004.

Table 10: Chassis Inspection and Maintenance by Seven Steamship Lines, 2003

Type of Inspection or Maintenance	Details
Inbound and Outbound Inspections	<ul style="list-style-type: none"> • 85% to 90% of the chassis receive inbound inspections (3 lines inspect 100%). These are visual inspections of components to identify defects requiring the attention of maintenance personnel. • 2 lines have inbound roadability lanes at some facilities where truckers with complaints about components can return equipment for more thorough inspection and repair. • 5 lines report that 100% of their chassis receive outbound inspections, while 2 lines left such to the driver, but have roadability lanes where drivers with complaints can return equipment for inspection and repair. • West Coast marine terminals typically do not conduct inbound or outbound inspections unless requested by the driver. Quarterly BIT inspections make such superfluous. • Items inspected: brake system, suspension system, frame, tires, wheels/rims, lighting devices, reflectors, coupling devices, and twist locks. May also check landing gear, oil in wheel hubs, registration, FMCSA inspection sticker, license plates and mud flaps. • In addition to the inbound and outbound inspections, most lines, and particularly the two that left outbound inspections to the driver, perform full inspections of all components whenever major component maintenance is required; some lines also reported using roving vans at container yards or marine terminals to inspect and repair chassis prior to dispatch. • Records of inspections are kept for an average of 3-5 years (1 line keeps records for 1 year, 3 lines for 7 years). • Time and cost of inbound/outbound inspections: 10 minutes and \$4.10 to \$12.00 per inspection.

Type of Inspection or Maintenance	Details
Annual Inspections	<ul style="list-style-type: none"> • All chassis are inspected annually • Some lines use sticker or stencil to note FMCSA inspection; some lines keep manual or automated databases. • 3 lines did not know how many chassis passed inspection without needing repair; 4 lines said from 25% to 65% of their chassis passed inspection without needing repair; the vast majority of repairs were for lights, lenses and tire swaps or preventive maintenance. • Most repair/maintenance performed is for normal wear and tear; critical defects are not being found at the time of the annual inspections because the chassis are being inspected and repaired throughout the year. • The most common repair is of lights, and tires are the next most common repair.
Preventative Maintenance	<ul style="list-style-type: none"> • All lines have a preventive maintenance programs • Periodic maintenance is both time-based (keyed to the annual or California BIT quarterly inspection cycles) and event-based (keyed to repair events – those chassis requiring major component maintenance are given a thorough inspection and preventive maintenance is performed at that time). • Items inspected and serviced (as needed): brake system, suspension system, frame, tires, wheels/rims, lighting devices, reflectors, coupling devices, and twist locks, plus brake adjustment and component lubrication.
Other	<ul style="list-style-type: none"> • Most chassis are typically inspected and repaired several times per year in addition to the periodic required inspections.

Source: OCEMA response to FMCSA intermodal survey, 2004.

While this shift (from event- to time-based inspections) would likely benefit truckers involved in intermodal drayage (since it would presumably reduce delays in outbound lanes of intermodal terminals and shift some existing IRM responsibilities across entities), it would require a change in the approach to IRM followed by some intermodal equipment providers.

Information from AAR on the three member railroads whose IRM activities are summarized in Table 9 indicated that those railroads together spent approximately \$75 million on IRM for the 55,328 chassis under their control, or about \$1,358 per chassis. The AAR members reported their chassis moved an average of 10,334 miles per year. The average annual IRM cost per chassis per mile was therefore \$0.13.

Based on information from AAR, annual chassis inspection takes about 30 minutes and costs between \$18 and \$20 per chassis.⁵⁴ Consequently, railroads spend approximately 1 percent of their reported IRM costs for annual inspections of chassis.⁵⁵

Information from OCEMA for the seven steamship line members whose IRM activities are summarized in Table 10 indicated that the members spent approximately \$156.5 million on IRM for the 227,548 chassis under their control, or about \$688 per chassis.

Some of the seven OCEMA members reported mileages for their chassis. Those mileages were between 3,000 and 5,000 miles per year, with the average mileage being 4,500 miles per year. Assuming that those OCEMA members providing other information but not reporting mileages for their chassis experienced similar chassis use, the average IRM cost per chassis per mile was \$0.15. This is similar to the per mile costs reported by railroads.

Information from ATA for nine member trucking companies indicated that, during 2003, those companies needed to repair, on average, 214 chassis tendered to them by a chassis provider at a cost of approximately \$202 per repair.⁵⁶ In addition, these companies were assessed thousands of dollars in fines due to safety violations for the chassis that were obtained from chassis providers. A portion of the repair costs and fines is undoubtedly attributable to the failure of some chassis providers to properly inspect, repair, and maintain their chassis.

⁵⁴ According to the AAR's response to FMCSA's intermodal survey, the average cost of a 30-minute inspection by a railroad's own personnel is \$20, while the average cost for an outsourced inspection is \$18. About 30 percent of the annual chassis inspections are performed by railroad personnel and 70 percent of the annual inspections are outsourced.

⁵⁵ According to AAR's response to FMCSA's intermodal survey, the 3 reporting railroads had 55,328 chassis in 2003 and spent approximately \$75 million for chassis IRM. On a per chassis basis, that is approximately \$1356 ($= \$75,000,000 / 55,328$). The estimated annual inspection cost, which is between \$18 and \$20 per chassis, is slightly more than 1 percent of this \$1356 ($\$18 / \$1356 = 0.0133$; $\$20 / \$1356 = 0.0147$).

⁵⁶ This does not include any costs reimbursed by the chassis providers.

Cost Impact of Systematic IRM Requirement

As stated, current rates of compliance with the systematic IRM regulations are unclear. Based on the information provided by the OCEMA and AAR surveys, which are discussed above, systematic IRM programs that are consistent with the proposed rules currently cover the majority of chassis owned or leased (long term) by these entities. However, anecdotal information obtained during roadside inspections with state enforcement personnel, as well as port visits by FMCSA and its state partners indicate that the compliance of existing systematic IRM programs appears to be less than 100 percent. The proposed rule would bring the systematic IRM programs of all intermodal providers into full compliance with those requirements by explicitly requiring equipment providers to undertake such programs, requiring them to register with FMCSA and mark their chassis, and establishing various enforcement mechanisms through which these providers, and the chassis controlled by them, can be closely monitored by FMCSA to ensure compliance with the safety regulations.

Additional Inspection Costs

The FMCSA is particularly uncertain about the proportion of chassis that are currently covered by systematic IRM programs. Because of this uncertainty, and to ensure that we do not underestimate the direct or indirect costs of this proposed rule, FMCSA assumes that between 25 and 50 percent of the existing intermodal chassis population are currently not in compliance with existing systematic IRM regulations. FMCSA assumes that these chassis would receive additional inspections each year as part of systematic IRM programs implemented or modified as a result of this proposed rule.⁵⁷ For the purposes of quantifying and monetizing the economic costs of this proposed rule, this analysis assumes that these non-compliant chassis would receive three additional inspections each year, on average, in addition to the annual inspection that FMCSA believes is already conducted on each of these chassis. Conversely, this analysis assumes that the remainder, or 50 to 75 percent of all chassis currently in use, are already provided at least four complete inspections per year and therefore, would not require any additional inspections as a result of this proposed rule. FMCSA has developed the above assumptions based on OCEMA and AAR responses to the FMCSA intermodal equipment provider surveys, as well as from information gathered while attending port visits and roadside inspections with its state partners. And while the OCEMA and AAR surveys indicated that systematic chassis IRM programs were well established by their members, FMCSA believes that the respondents to these surveys are generally the largest intermodal equipment providers in the industry, those FMCSA that believes are generally the best capitalized organizations and hence, those the agency expects would be the most compliant with existing regulations. Conversely, given that FMCSA was not able to survey chassis pool operators as part of its research, it is unclear to what degree these entities are complying with the existing regulations. Also, it is recognized that the seven steamship lines represented in the OCEMA survey responses, the three railroads in the AAR response, and the nine motor carriers in the ATA response do not fully represent the

⁵⁷ Such an approach is permitted by OMB Circular A-4 (September 2003).

population of affected entities. As such, FMCSA concluded that a conservative approach to estimating costs for this evaluation would be to assume a certain degree of non-compliance by non-motor carrier intermodal equipment providers with the existing systematic IRM regulations.

Based on the California BIT Program experience to date and comments made by OCEMA, it is possible that the proposed rule may in fact result in fewer inbound and outbound inspections of chassis at terminals. As a result, additional inspection costs expected as a result of explicitly applying the systematic IRM requirements to equipment providers may in fact be offset by a decrease in pre- and post-trip chassis inspection costs. For instance, it was reported by OCEMA in the FMCSA survey response that quarterly inspections, such as those required by California's BIT Program, typically obviate the need for outbound (or inbound) inspections of chassis by equipment providers.⁵⁸ However, the actual level of decrease in these inspections is not known (nor were specific figures cited by OCEMA in its response to FMCSA). As such, no decrease in pre- and post-trip chassis inspections was assumed in this analysis. Such an assumption by FMCSA (i.e., no substitution effect between systematic and inbound/outbound inspections) will further ensure that FMCSA does not underestimate the economic costs of this rulemaking.

This analysis assumes that it takes, on average, 30 minutes to conduct an inspection of an intermodal chassis.⁵⁹ The cost of conducting inspections varies widely depending on the nature of the labor being used (e.g., unionized or not, employees or contractors, on-site or off-site) and the geographic region.

A transportation inspector earning \$30.79 per hour in wages and benefits would perform the inspections, supported by a mechanic. The mechanic is assumed to devote 15 minutes of time to the inspection, while the inspector is assumed to devote 30 minutes to the effort. The median hourly wage for a mobile heavy equipment mechanic is estimated from employment and wage data from Occupational Employment Statistics to be \$17.69 as of May 2003. Assuming benefits are equal to 31.5 percent of wages, the total loaded labor cost of the mechanic would be \$23.26 per hour. The total cost of inspecting an intermodal chassis would be \$21.21. This cost estimate is consistent with the AAR members' estimates of annual inspection costs of \$20 if performed by their own personnel and \$18 if outsourced to an on- or off-site terminal inspection operator.⁶⁰ The cost of four inspections per year would be \$84.84.

Using responses from the recent intermodal equipment provider surveys, FMCSA estimate that the average cost of inspection, repair, and maintenance was \$1,356 per

⁵⁸ Intermodal chassis operational information provided by OCEMA to FMCSA in 2004 in response to questions posed by FMCSA.

⁵⁹ FMCSA assumes 30 minutes for all its current annual inspection programs. AAR members noted that it takes 30 minutes to conduct the annual inspection of intermodal chassis. However, OCEMA indicated that the annual FMCSA inspection takes 1 hour regardless of who is performing the inspection.

⁶⁰ Cost estimates for an inspection have ranged from a low of \$8 projected by the Teamsters and the American Trucking Associations (Swan paper) to \$33-120 estimated by OCEMA for a one-hour inspection.

chassis per year for railroads and \$688 per chassis per year for steamship lines. When put on a per mile basis (also taken from the survey responses), these estimates were close (\$0.13 for railroads and \$0.15 for steamship lines). For the purposes of this analysis, the average, \$1,022 per chassis per year, is used as the expected cost of repair and maintenance.

Additional Maintenance and Repair Costs

FMCSA acknowledges that the maintenance and repair activities of some systematic IRM programs might need to be expanded in order to bring the programs into full compliance with the proposed requirements. For the most part, however, the only change expected is that maintenance and repair will become more proactive and less reactive. For instance, some intermodal providers currently perform preventative maintenance when driver, inbound, outbound, or roadability inspections at terminals find problems (or during the annual inspection required by the FMCSRs). The proposed rule would make the preventative maintenance of those providers more regular or time-based (for this analysis we assumed quarterly), thereby pushing necessary maintenance and repair upstream in the process and reducing the “reactive” nature of the IRM process.

There will most likely be some shift of repair costs from motor carriers to intermodal chassis providers, but the size of this shift is uncertain. However, this shift represents a transfer payment of existing costs, and therefore will not impact the overall costs or benefits of the proposed rule (note that the RIA is generally not concerned with transfer costs since they are not “new” costs resulting from the proposed rule).

Total Systematic IRM Program Costs

Table 11 shows the estimated costs of IRM programs for equipment providers, based on the aforementioned assumptions about existing compliance. Estimates are presented for the cases where (1) 50 percent of all chassis are assumed to be in compliance with existing systematic IRM regulations (requiring no additional inspections per year), while the other 50 percent are assumed to require three additional inspections per year (where the fourth quarterly inspection represents the annual inspection, which FMCSA believes is already being performed), and (2) where 75 percent of all chassis are assumed to be in compliance with existing regulations (requiring no additional inspections per year), while the other 25 percent would require three additional inspections per year. As the table indicates, according to FMCSA assumptions for this analysis, the proposed rule is expected to add between \$13.5 million and \$27.0 million per year to the cost of systematic IRM programs for intermodal equipment providers, depending on the percentage of chassis which are already believed to be in compliance with the existing systematic IRM regulations. The estimated total present value of the cost over a 10-year period is estimated to be between \$94,968,480 and \$189,936,960.⁶¹ It should be noted that these costs may actually decrease with the formation of regional common chassis pools. Anecdotal evidence from the Hampton Roads common chassis pool operation indicates that significant efficiency benefits have been captured, and better maintenance

⁶¹ Estimated assuming a 7 percent discount rate.

of the chassis has been evident, by moving to a regional common chassis pool operation.⁶²

Table 11: Estimated Cost of Systematic IRM Programs for Chassis

Intermodal Provider	Number of		Existing IRM Costs (\$ per year)		Additional Costs due to NPRM (\$ per year)	
	Providers	Chassis	Assuming 50% of chassis are in full compliance and 50% require three additional inspections per year	Assuming 75% of chassis are in full compliance and 25% require three additional inspections per year	Assuming 50% of chassis are in full compliance and 50% require three additional inspections per year	Assuming 75% of chassis are in full compliance and 25% require three additional inspections per year
Steamship Lines	93	392,000	\$913,771,250	\$927,292,625	\$27,042,750	\$13,521,375
Railroads	5	96,200				
Common Pool Operators	10	320,000				
Motor Carriers	1,900	41,800				
Total	2,008	850,000				

2.4.4 Costs Associated with Record Keeping

As stated above, FMCSA expects that the systematic inspection, repair, and maintenance program called for in the proposed regulations will require four inspections of intermodal chassis per year, on average.

FMCSA estimates that the time needed to document and file each inspection report is approximately 3 minutes.⁶³ Therefore, this analysis assumes that it would take each intermodal equipment provider approximately 3 minutes on average per intermodal chassis per inspection to document and retain the inspection reports. Assuming that a transportation inspector earning \$30.79 per hour in wages and benefits would perform the inspections and document the findings, the total cost to document and retain each inspection report is estimated to be \$2 per intermodal chassis per inspection (or $(\$30.79/60)*3$).

Annual Inspections

⁶² Transport Topics, p.1, November 28, 2005

⁶³ FMCSA's Supporting document on information collection titled "Inspection, Repair, and Maintenance" covered by OMB approval number 2126-0003.

The periodic inspection record keeping requirements found in § 396.21 include preparation of a report by a qualified inspector that

- Identifies the individual performing the inspection,
- Identifies the motor carrier operating the vehicle,
- Identifies the date of the inspection,
- Identifies the vehicle inspected,
- Identifies the vehicle components inspected and describes the results of the inspection, including the identification of those components not meeting the minimum standards, and
- Certifies the accuracy and completeness of the inspection as complying with all the requirements described in FMCSRs.

The inspection report must be retained for a period of fourteen months.

Under current regulations, motor carriers are required to comply with the periodic record keeping requirements of § 396.21 and the proposed rule would not impose any additional record keeping requirements on them.

The proposed rule may impose additional record keeping requirements on the other intermodal equipment providers (i.e., steamship lines, railroads, and common pool operators). Those other providers are currently inspecting their chassis on an annual basis. Good business practice dictates that records of those inspections be kept to make certain that the same chassis is not inspected more than once and that all chassis are inspected at least once.

For the purposes of this analysis, the other intermodal equipment providers (i.e., steamship lines, railroads, and common pool operators) are assumed to prepare a report that is equivalent to the one required by § 396.21, given that FMCSA has received no information through its surveys, port visits, or roadside inspection activities, that would indicate otherwise. Furthermore, those providers are assumed to keep records of the inspections for at least fourteen months (again, no information has been received by FMCSA to indicate otherwise). The proposed regulatory change, consequently, will not impose any additional regulatory requirements on the other providers relating to their annual inspections.

Systematic Inspections

It is assumed that motor carriers are currently performing full inspections of their intermodal chassis four times per year, due to the fact that these entities are already directly subject to Part 396.3 regulations and are generally performing such maintenance on their non-intermodal trailer fleet. This is not assumed to be the case for other intermodal equipment providers (i.e., steamship lines, railroads, and common pool operators), however. Some portion of chassis owned or controlled by other (non motor carrier) equipment providers (between 25 percent and 50 percent in this analysis) are

assumed to be inspected once annually. Consequently, the proposed regulatory change will require additional record keeping for non-motor carrier intermodal equipment providers.

Assuming that the record keeping for each intermodal chassis inspection costs \$2, and that these intermodal equipment providers will need to perform three additional inspections per year per chassis, the record keeping requirements of the proposed regulatory change are expected to cost the non-motor carrier intermodal equipment providers an additional \$6 per chassis per year.

Total Cost of Record Keeping

Table 12 presents the total annual estimated cost of record keeping currently and under the proposed regulations, along with the increase in the cost of record keeping attributable to the new regulations.

Table 12: Estimated Cost of Record Keeping

Description	Estimated Number of		Existing Annual Costs	Annual Cost Under the Proposed Regulations	Change in Annual Costs Attributable to the Proposed Regulations
	Providers	Chassis			
Steamship Lines	93	392,000	\$784,000	\$3,136,000	\$2,352,000
Railroads	5	96,200	\$192,400	\$769,600	\$577,200
Common Pool Operators	10	320,000	\$640,000	\$2,560,000	\$1,920,000
Motor Carriers	1,900	41,800	\$334,400	\$334,400	\$0
Total	2,008	850,000	\$1,950,800	\$6,800,000	\$4,849,200

The annual cost of record keeping attributable to the proposed rule is \$4,849,200. Over the 10-year analysis period, the present value of the cost of record keeping will be \$38,907,752.⁶⁴

2.4.5 Costs of New Defective and Deficient Equipment Reporting

The proposed rule would require that intermodal equipment providers establish a system for motor carriers and drivers to report to the providers any defects or deficiencies in tendered chassis that would affect the safety of the operation of those chassis or result in its mechanical breakdown on the road. This proposed change potentially requires (1) the establishment of the system, (2) the minimum information that the intermodal provider must obtain from motor carriers and drivers, (3) the corrective actions that must be taken when a chassis is identified as being defective or deficient in some way, and (4) the retention period for all documentation that is generated as a consequence of this system.

⁶⁴ Estimated assuming a 7 percent discount rate.

This requirement would be added to the FMCSRs in a new § 396.12. All of these potential impacts are discussed below.

Nature of Notification

The discovery of a chassis problem by a driver could occur at any of a variety of locations. It might occur during the driver's mandated inspection of the chassis at the start of a trip, during the movement over the public roadways from the origin terminal to the destination of the container on the chassis, or at the destination. As mentioned previously, the average length of haul for chassis transported by the nine trucking firms that responded to FMCSA's intermodal survey varied from 11-20 miles to 150-200 miles.

Because the location where the problem is discovered can vary so much, the notification procedure established by the intermodal providers may be telephone-based.⁶⁵ Drivers will need to be provided with a telephone number to call when they pick up a chassis. It will be up to the equipment providers to determine whether they need a dedicated telephone answering system with trained telephone operators or whether they can use their existing service staff to take all calls.

For the purposes of this analysis, it is assumed that no additional costs will be incurred in order for intermodal providers to receive notification of problems. Because problems with chassis already occur, systems have already been established to address such problems, and because handling such problems expeditiously would appear to be good business practice, it is expected that adequate procedures for notification already exist. Additionally, FMCSA received no information during its data collection immediately prior to this rulemaking to indicate otherwise, and the agency found such systems already in place during its port visits. Consequently, no additional costs are expected to result.

Motor Carriers and Drivers

For the systems established by providers to be effective, motor carriers and drivers will need to report defective or deficient chassis. Of course, motor carriers and drivers are responsible for taking only roadworthy chassis on the public roadways, so it would appear to be in their best interest to report any problems with defective or deficient chassis that are encountered.

Reporting problems will take time and, as indicated above, sometimes a telephone. Drivers or their employers will be charged for calls from cell and pay phones. Additionally, drivers or their employers will need to devote some labor time, however limited, to making the call and reporting the problem.

For the purposes of this analysis, it is assumed that no additional costs will be incurred in order for drivers and motor carriers to notify chassis providers of problems with defective or deficient chassis. Again, problems with chassis already occur, and drivers or motor

⁶⁵ This does not preclude drivers from reporting problems to providers by other means. At terminals where the drivers pick up chassis, this may be direct face-to-face communications.

carriers are already contacting providers (whether in person or by phone) to inform them of those problems.

Trouble Reports

According to the proposed § 396.12, the report taken by the intermodal chassis provider will need to include the following information:

- The name of the motor carrier responsible for the operation of the chassis at the time the defect or deficiency was discovered by or reported to the driver.
- The USDOT identification number of the motor carrier.
- The date and time the report was submitted
- The defects or deficiencies reported by the motor carrier or driver

Providers may want to collect additional information. For instance, providers may want to know the location of chassis if they are going to need to send a service team or tow truck to the site of the chassis.

As mentioned before, chassis currently experience problems that are being reported to intermodal chassis providers. With the possible exception of the USDOT (or other unique) identification number, good business practice would seem to require that all of the information mandated in reports under new § 396.12 be collected currently. Additionally, FMCSA received no information during its data collection immediately prior to this rulemaking to indicate otherwise. Therefore, no additional costs are expected to result from the required trouble reports.

Corrective Actions

After a chassis for which a trouble report has been submitted returns to the possession of the intermodal chassis provider, § 396.12 would mandate that the provider must correct those reported defects or deficiencies in the chassis that make the chassis not roadworthy. Furthermore, before the chassis may be tendered once again to a motor carrier, the provider must document the actions taken to correct the reported defect or deficiency, or must document that such repairs were unnecessary.

Information in Tables 9 and 10 would seem to imply that intermodal chassis providers currently have repair facilities for dealing with chassis that are not roadworthy. Additionally, during its port visits, FMCSA staff identified such facilities at all the terminals it toured. Consequently, § 396.12 would not require the establishment of new facilities nor is there any reason to believe that the new section will necessitate any expansion of existing facilities.

Good business practice for chassis providers and their service departments would include documenting repairs made or documenting that repairs were not made. This information assists those monitoring the cost and work of repair facilities. Information in Tables 9 and 10 would seem to confirm that intermodal equipment providers are indeed following

good business practice. The proposed § 396.12 would not increase the need for this documentation. It might, however, change the nature of the documentation somewhat. For instance, if a chassis were brought in for a defective wheel and no wheel problem could be found, then current documentation might just say "Checked wheels." Under the proposed § 396.12, the documentation might say "Check wheels after receiving trouble report from motor carrier. Complete check revealed no problem." FMCSA believes any change in documentation would be minor and would not materially add to the costs of the providers.

Retention of Records

Under the proposed § 396.12, all documentation must be kept for a period of three months from the date of a trouble report. Available intermodal chassis provider industry information indicates that records of inbound and outbound inspections are kept between one and seven years, with three to five years being typical.⁶⁶ FMCSA has no reason to expect that repair records, which are arguably more critical to the operation of intermodal chassis providers than records on inbound and outbound inspections, would be kept for less time. Additionally, FMCSA received no information during its data collection effort immediately prior to this rulemaking to indicate otherwise. Consequently, the retention of records, as required by the proposed § 396.12, would not add to the costs of intermodal chassis providers.⁶⁷

Overall Impact

The overall impact of the proposed § 396.12 on the costs of intermodal chassis providers would be negligible. All required actions are currently being performed in one form or another. The requirement embodied in the proposed § 396.12 adds no new actions. Furthermore, the proposed § 396.12 is not expected to add materially to the current workload of intermodal chassis providers, their service organizations, or to motor carriers and their drivers.

2.4.6 Total Compliance Costs of the Proposed Regulations

Table 13 summarizes the expected compliance costs attributable to the proposed regulation.

⁶⁶ Information on intermodal chassis operations submitted by OCEMA to FMCSA in 2004 in response to questions posed by FMCSA.

⁶⁷ Alternatively, any costs associated with the retention of records for the proposed defective and deficient equipment reporting system could be assumed to be covered by the costs associated with record keeping that were discussed previously in Section 2.4.4 of this report.

Table 13: Estimated Costs of the Proposed Rule

Requirement	Existing Costs (Annual)	Additional Costs due to the NPRM		
		Initial Cost (Year 1)	Total for Recurring Costs (Years 2-10)**	Total Cost (Years 1-10)**
Filing MCS-150	\$19,502	\$1,110	\$1,880	\$2,990
Chassis Marking	\$0	\$8,922,528	\$3,880,625	\$12,803,153
Systematic Inspection, Repair, and Maintenance Costs	\$913,771,250 to \$927,292,625	\$13,521,375 to \$27,042,750	\$81,447,105 to \$162,894,210	\$94,968,480 to \$189,936,960
Recordkeeping	\$1,950,800	\$4,849,200	\$34,058,752	\$38,907,952
§ 396.12	---	\$0	\$0	\$0
Total Costs	\$915,741,552 to \$929,262,927	\$27,294,213 to \$40,815,588	\$119,388,362 to \$200,835,467	\$146,682,575 to \$241,651,055

*Included in the costs of other actions. **Net present value over a 10-year period using a 7 percent discount rate.

Initial, or first-year, costs are estimated to be between \$27.3 million and \$40.8 million. The total compliance costs, or the sum of the total initial (year 1) and total recurring (years 2-10) costs, are expected to be between \$147 million and \$242 million. Consistent with OMB directives, this is the present value of the expected cost stream calculated over a 10-year period using a 7 percent discount rate.

2.5 Estimation of Benefits

The proposed regulation's aim is to reduce the probability of crashes involving an intermodal chassis. The explicit inclusion of equipment providers in the scope of FMCSRs would ensure that those intermodal equipment providers would be subject to the same enforcement proceedings, orders and civil penalties as motor carriers, property brokers, and freight forwarders. The systematic inspection, repair, and maintenance requirements would ensure safer and more reliable chassis on the Nation's highways. The expected benefits of the proposed rule include the following:

- Increase the safety of intermodal chassis operation by reducing crashes attributable to those chassis;
- Increase the operational efficiency of intermodal chassis by
 - Reducing the vehicle out-of-service rate;

- Reducing the average idle time spent by truckers waiting for chassis repairs on the road;
- Reducing the average time spent by truckers at rail terminals or port facilities waiting to be given a roadworthy chassis. This effectively decreases congestion costs at those facilities, which are typically located in urban areas.

The following sections quantitatively analyze the potential benefits of the proposed rule by estimating the number of crashes avoided to justify the compliance costs directly or indirectly imposed by the rule. The sections also provide qualitative discussion of benefits of the proposed rule where quantitative estimates are not available.

2.5.1 Threshold Analysis for Safety Benefits

Tables 2 and 3 showed that intermodal trailers have significantly higher vehicle out-of-service (OOS) rates than non-intermodal trailers. In particular, Table 3 results indicated that motor carrier owned intermodal chassis appear to have lower OOS rates than the comparable equipment owned by non-motor carrier equipment providers, although these findings are still considered preliminary because the sample size of chassis inspection data by ownership type was quite small.⁶⁸ The proposed rule's explicit inclusion of intermodal equipment providers would better enable FMCSA to determine whether and how equipment providers are complying with the provisions of FMCSRs and to compel compliance, if necessary. Additionally, it is expected that some portion of the chassis currently in use will receive additional inspections each year, since this proposed rule explicitly requires non-motor carrier intermodal equipment providers to comply with the existing systematic IRM regulations. A better-inspected, maintained, and repaired intermodal chassis fleet would be likely to reduce crashes on the Nation's highways.

The estimated cost of a crash involving a fatal injury is \$3.57 million for a truck tractor with one trailer,⁶⁹ and the costs of non-injury or property-damage-only crashes are estimated to be \$12,077. The estimated average cost of a police reported crash involving a truck tractor with one trailer is \$76,698.⁷⁰

Using recent data on the number of crashes involving truck tractors with single trailers, Table 14 estimates the total crash costs for these vehicles. The cost estimate shown in

⁶⁸ The differences were not found to be statistically significant, however, at even the 0.15 level, although this could be due to the very small sample size of data available at the time of the analysis.

⁶⁹ Estimated in 2003 dollars calculated using the Gross Domestic Product (GDP) Deflator and estimates from "Revised Costs of Large Truck and Bus Involved Crashes," Final report for FMCSA by Eduard Zaloshnja and Ted Miller, which is available on the Internet at ai.volpe.dot.gov/CarrierResearchResults/CarrierResearchContent.asp.

⁷⁰ Estimated in 2003 dollars calculated using the Gross Domestic Product (GDP) Deflator and estimates from "Revised Costs of Large Truck and Bus Involved Crashes," Final report for FMCSA by Eduard Zaloshnja and Ted Miller, which is available on the Internet at ai.volpe.dot.gov/CarrierResearchResults/CarrierResearchContent.asp.

Table 14 includes the cost of fatal and injury crashes, but does not include the costs associated with property-damage-only crashes.

Table 14: Estimated Costs of Crashes involving Truck Tractors with Trailers, 2002

Truck-Tractors	Fatal Crashes	Injury Crashes	Total Estimated Costs
1 trailer	2,937	42,000	\$3,447 million

Source: "Traffic Safety Facts 2002", which can be found on the Internet at www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2002Final.pdf

As stated above, the proposed rule is expected to result in compliance costs of between \$27.8 million and \$41.3 million in the first year, and \$147 million and \$242 million over the first 10 years. To be cost-beneficial, the proposed rule would need to result in benefits that are greater than that cost. Focusing on saved lives alone, the proposed rule would need to prevent between 8 and 12 fatalities per year attributable to crashes involving intermodal chassis over that same 10-year period in order to reach the break-even point. These 8 to 12 fatalities represent just 0.2% to 0.3% of the 3,762 fatalities in combination truck crashes in calendar year 2003. At the break-even point, compliance costs equal the benefits attributable to avoiding some of the fatal crashes that would have occurred in the absence of the proposed regulation.⁷¹ Of course, reduced injuries, property damage, and other incident consequences would reduce the number of lives that would need to be saved in order for the rule to be cost-beneficial.

2.5.2 Benefits Associated with Increased Operational Efficiency

Currently, there is no standard practice for a truck driver or motor carrier when confronted with an intermodal chassis out-of-service order resulting from a roadside inspection.⁷² One of the biggest uncertainties is the issue of responsibility. If the chassis' problem developed after the driver left the terminal, then the responsibility in many cases lies with the commercial driver and the motor carrier, not with the equipment provider. If, however, the chassis' problem was a pre-existing condition, then the chassis owner is responsible. According to IANA, many equipment providers have service contracts with repair vendors. If a chassis' problem needs to be fixed in order for the driver to resume operation, these vendors are often called to provide the repairs. Additional uncertainty surrounds the question of authorization for this repair, since the service contract is between the service vendor and the chassis provider. A service request would require an authorization for repair by the chassis provider. Alternatively, the truck driver would have to rely on the motor carrier to make arrangements with the service vendor to repair the chassis.

⁷¹ The present value analysis used to calculate this estimate uses a standard 7 percent discount rate.

⁷² According to Ms. Joni Casey, President of the IANA.

The potential reduction of vehicle out-of-service (OOS) rates would increase the operational efficiency of intermodal transportation as a whole. Truckers hauling a chassis are not allowed to operate until the repairs required by an "out of service order" have been made. Fewer out-of-service orders would mean less disruption of supply chains. According to information provided to FMCSA by ATA members, carriers spend, on average, 3 hours of a driver's time and 1.5 hours of other employees' time to correct each vehicle out-of-service order received on chassis tendered by an equipment provider. The opportunity cost for a truck driver and one employee's time is calculated at \$116.35 per vehicle out-of-service order attributable to a problem chassis.⁷³ Given that, on average, between 18.5 and 25 percent of roadside inspections of intermodal chassis resulted in vehicle out-of-service violations (depending on whether 4-state sample, 2004 Roadcheck, or MCMIS data are used), the cost savings associated with this proposed rule, in terms of the opportunity cost of the driver and motor carriers' time, would quickly add up, as there are approximately 850,000 intermodal chassis in operation in U.S.

Roadside repair costs for intermodal chassis, outside of those involved in vehicle-out-of-service violation orders, may also be significantly reduced as a result of systematic IRM programs, given anecdotal evidence indicating that intermodal chassis are typically in poorer condition than non-intermodal trailers.

It is unclear precisely how many OOS orders and roadside breakdowns of intermodal chassis would be prevented from implementation of this proposed rule. However, FMCSA did attempt to estimate a range of estimates for the expected cost savings associated with reduced OOS orders by assuming that the intermodal chassis OOS rate would be reduced to the industry average as a result of this proposed rule. Specifically, FMCSA used MCMIS data to estimate the cost savings associated with reducing the "Unit 2" (trailing unit) VOOS rate for "intermodal only" carriers from 25 percent to 13 percent, or the Unit 2 VOOS rate for all motor carriers in CY2003. Such a change in the Unit 2 VOOS rate for "intermodal only" carriers would result in at least 349 vehicle inspection VOOS orders avoided annually. Multiplying this figure by \$116.35, or the average opportunity cost for a motor carrier to correct a VOOS order, reveals expected cost savings of at least \$40,606 annually. FMCSA believes this represents a lower bound for the expected efficiency cost savings because a count of "intermodal only" carriers in MCMIS (or those carriers indicating they just haul intermodal containers) revealed only 641 such carriers, while other data sources (i.e., IANA) indicate the number of intermodal carriers is well into the thousands. Additionally, this is considered a conservative estimate, since FMCSA used an average commercial driver wage rate to estimate the opportunity costs of a VOOS order, in lieu of a "revenue per tractor" estimate, which would be higher since it accounts for the opportunity cost of the vehicle as well as the driver.

⁷³ Using National employment and wage data, the median hourly wage for a truck driver is estimated at \$16.01 and supervisor/manager is estimated at \$21.08. With fringe benefit added to the wages, the hourly wage and salaries are estimated at \$23.39 and \$30.79 for truck driver and the manager/supervisor respectively.

To estimate an alternative estimate for expected cost savings, FMCSA analyzed the cost savings of reducing the Unit 2 VOOS rate of motor carriers hauling "intermodal plus other" commodities from 15 percent to the Unit 2 VOOS rate for the overall industry (13 percent). Reducing the Unit 2 VOOS rate for motor carriers hauling "intermodal plus other" commodities to the industry average would result in 3,529 Unit 2 VOOS orders avoided by these carriers annually. Multiplying this figure by \$116.35 (average opportunity cost of a carrier's time to correct a VOOS order) reveals annual savings of approximately \$410,600. Regarding this estimate, the reader is asked to note that (1) not all inspections (and Unit 2 VOOS orders) received by these carriers would be expected to occur on intermodal chassis (since these carriers haul other commodities besides containers), and (2) according to IANA, motor carrier signatories to the UIIA total 5,500, or less than half the number that MCMIS indicates are hauling intermodal containers. Conversely, these data limitations (which would appear to inflate the cost savings) are offset by the fact that FMCSA used an average commercial driver wage rate to estimate the opportunity costs of a VOOS order, in lieu of a "revenue per tractor" estimate, which would be higher since it accounts for the opportunity cost of the vehicle as well as the driver. Details regarding the estimation of these potential cost savings are presented in Appendix 1 of this document.

At intermodal terminal facilities, the proposed rule would also reduce the time needed for motor carriers to pick-up a roadworthy chassis. Motor carriers report that they currently spend between 30 minutes and a couple of hours to find a roadworthy chassis. That means that motor carriers could save between \$11.69 and \$46.78 in driver's costs alone, if this wait/search time could be completely eliminated.⁷⁴ The proposed rule, by mandating that chassis providers implement systematic inspection, repair, and maintenance programs, can be expected to reduce the number of bad chassis being offered in service, and thereby reduce the time needed by truck drivers to find a roadworthy chassis. However, since the specific amount of time saved is not clear, explicit cost saving (benefit) estimates were not developed for this potential impact.

2.5.3 Benefits Summary

The proposed rule is expected to result in a number of benefits. The primary benefits are expected to result from a reduction in the number of crashes attributable to defective or deficient chassis, and from increased operational efficiency.

2.6 *Comparison of Costs and Benefits*

A program for the systematic inspection, maintenance and repair of intermodal chassis would help ensure the safety of those chassis on the road and enhance the reliability and economic efficiency of the intermodal freight traffic in the U.S. The proposed rule would (1) require intermodal equipment providers to comply with all relevant FMCSR provisions, and (2) ensure consistency between Federal and State safety regulations

⁷⁴ Using National employment and wage data, the median hourly wage for a truck driver is estimated at \$16.01. With fringe benefit added to the wages, the hourly wage is estimated at \$23.39 for a truck driver.

relating to intermodal chassis. Table 15 compares the current FMCSR requirements with new requirements proposed in this NPRM and shows the benefits and costs associated with the proposals.

Table 15: Comparison of Costs and Benefits of the Proposed Regulation

Regulatory Provisions	Comparison		Costs	Benefits
	Current requirement	NPRM		
Part 386: Rules of Practice for Motor Carrier Safety and Hazardous Materials Proceedings	Enables the FMCSA to determine whether a motor carrier, property broker, freight forwarder, or its agents, employees, or any other person subject to the jurisdiction of FMCSA has failed to comply with the provisions or requirements of applicable statutes and the corresponding regulations.	Explicitly include intermodal equipment providers.	No new costs associated with this provision.	Explicit inclusion of intermodal equipment provider would increase compliance with the provisions or requirements of applicable statutes and corresponding regulations and, if such violations are found, to issue an appropriate order to compel compliance with the statute or regulation, assess a civil penalty, or both. This will result in: 1. Increased safety of the intermodal chassis operation through reductions in crashes involving intermodal chassis. 2. Increased operational efficiency of the intermodal
Part 390: General applicability	Applicable to all employers, employees, and commercial motor vehicles which transport property or passengers in interstate commerce.	Explicitly include intermodal equipment providers.	1. \$2,990 for filing MCS-150 2. \$12.8 million for chassis marking	

Regulatory Provisions	Comparison		Costs	Benefits
	Current requirement	NPRM		
Part 393: Parts and accessories necessary for safe operation	Every employer and employee shall comply and be conversant with the requirements and specifications of this part. No employer shall operate a commercial motor vehicle, or cause or permit it to be operated, unless it is equipped in accordance with the requirements and specifications of this part.	Equipment providers would be held accountable for offering in interstate commerce intermodal equipment that is not equipped with all required parts and accessories and ensuring that each of those components are in safe and operable condition.	No new cost associated with this provision.	chassis operation by: a. Reduction in vehicle out-of-service orders related to poor intermodal chassis condition b. Reduction in idle time spent by the driver and the truck while waiting for required repairs on the chassis c. Reduction in time spent by truck drivers to find roadworthy chassis at the port or rail terminals
Part 396: Inspection, repair and maintenance	Every motor carrier shall systematically inspect, repair, and maintain, or cause to be systematically inspected, repaired, and maintained, all motor vehicles subject to its control.	Intermodal equipment providers would be required to establish a systematic inspection, repair and maintenance program and comply with periodic and annual inspection requirements established in parts 396 for motor carriers.	1. \$38.9 million for record keeping. 2. Between \$95.0 million and \$189.9 million for IRM costs attributable to additional inspections of chassis	

3 Appendix 1

Estimates for Potential Cost Savings due to Reduction in Vehicle Out-of-Service Violation Rates for Intermodal Chassis

The following section provides a preliminary estimate of the potential cost savings due to a reduction in vehicle out-of-service violation rates in intermodal chassis. FMCSA reviewed inspection results for motor carriers that identify themselves on the Motor Carrier Identification Report (FMCSA Form MCS-150) as “intermodal operations only” (those indicating that they only carry intermodal containers), motor carriers hauling “intermodal and other” commodities (that is, those indicating they haul intermodal as well as other commodities), and all remaining motor carriers. Examining the “intermodal only” carriers allows us to establish a lower bound on the number of motor carriers hauling intermodal containers and the annual number of inspections associated with these movements where a vehicle out of service (VOOS) order was assigned to the intermodal trailer (or Unit 2 or the trailing unit). Examining “intermodal plus other” motor carriers allows us to develop an alternative (higher) estimate on the number of carriers hauling intermodal containers and the annual number of inspections where a VOOS order was received on the intermodal trailer (or Unit 2 or trailing unit). It should be noted that some motor carriers that do not identify themselves as “intermodal only” transport intermodal containers in any given year (and receive VOOS orders on those trailing units). Some carriers that haul “intermodal plus other” commodities are transporting trailing units that are not intermodal containers on chassis, so some of the Unit 2 VOOS orders received by these carriers are not associated with transportation of intermodal trailers. Conversely, this analysis used a commercial driver wage rate, in lieu of an “average revenue per tractor” estimate, so only the opportunity cost of the driver (and not the tractor and trailer) is taken into account, thereby resulting in a lower potential cost savings estimate.

As a result, FMCSA believes the Motor Carrier Management Information System (MCMIS) data presented below in Table 16 provide reasonable bounds as to the minimum and maximum number of inspections where a VOOS order on the intermodal trailer could be expected to be avoided if this proposed rule were implemented. For this analysis, Unit 2 VOOS rates for “intermodal only” and “intermodal plus other” carriers are compared to those for all motor carriers. Additionally, an assumption is made implementing this proposed rule would reduce the Unit 2 VOOS rate for intermodal only carriers (currently 25 percent) and that of “intermodal plus other” carriers (currently 15 percent) to the national rate for trailing units (13 percent).

As detailed in the accompanying NPRM, the nationwide data presented in Table 17 from FMCSA’s Motor Carrier Management Information System (MCMIS) suggest the mechanical condition of intermodal container chassis operated by the motor carriers typically selected for roadside inspections is significantly worse than the semitrailers operated by motor carriers in non-intermodal operations. Although there are significant

differences in the population of intermodal-only motor carriers and intermodal-plus-other carriers versus all other motor carriers, and the total number of vehicle inspections conducted on trailers controlled by these carrier groups, FMCSA cannot ignore the disparity in the perceived condition of the vehicles as based on the Unit 2 VOOS rates. Table 17 below shows a slight difference between the OOS rate for semitrailers being transported by motor carriers in non-intermodal operations and semitrailers being transported by motor carriers with combined intermodal and non-intermodal operations. However, there is a significant difference between the semitrailer OOS rates for motor carriers engaged exclusively in intermodal operations versus those with combined operations and those with no intermodal activities. The semitrailer OOS rate for intermodal-only operations was 25 percent. The semitrailer OOS rate for motor carriers engaged in intermodal operations combined with some other type of operation(s) was 15 percent. The semitrailer OOS rate for motor carriers without intermodal operations was 13 percent.

Table 16: Out-of-Service (OOS) Rates of Non-intermodal and Intermodal Semitrailers; Data from the Motor Carrier Management Information System (MCMIS), CY2003

Commodity Segment	Number of Vehicle Inspections CY2003	No. of Vehicle Inspections with 1 or more OOS Violations		Percent OOS Rate	
		Unit 1 (Tractor)	Unit 2 (Semitrailer)	Unit 1 (Tractor)	Unit 2 (Semitrailer)
Intermodal Only (n=641)	2,894	519	725	18	25
Intermodal + Other (n=12,032)	145,377	15,963	22,428	11	15
All Motor Carriers (n=>500,000)	1,476,245	135,000	186,073	9	13
Source: Motor Carrier Management Information System (MCMIS), MCMIS Staff, Run Date-April 29, 2004.					

First, this analysis assumes that the proposed rule will reduce the vehicle out-of-service rates for intermodal chassis operated by 641 "intermodal only" motor carriers from twenty five percent to thirteen percent, which is the Unit 2 (trailing unit) out-of-service rate for all motor carriers in CY2003. FMCSA believes that this is a conservative estimate for a potential reduction in Unit 2 VOOS rate since the MCMIS data and industry information indicate that there are more than 641 motor carriers hauling intermodal containers on a regular basis. As such, we believe any change in the Unit 2 VOOS rate for the "intermodal only" carriers would serve as a lower bound for the

number of VOOS orders that could be expected to be avoided as a result of this proposed rule. These "intermodal only" carriers received 2,894 vehicle inspections in CY2003, 725 of which resulted in VOOS orders on the trailing unit (or intermodal chassis), for a Unit 2 VOOS rate of 25 percent. Reducing the number of intermodal chassis inspections with VOOS orders by 349 (or 12 percent), would reduce the Unit 2 VOOS rate of intermodal only carriers to 13 percent, or the Unit 2 VOOS rate for all motor carriers.

According to information provided to FMCSA by ATA members, carriers spend, on average, 3 hours of a driver's time and 1.5 hours of other employees' time to correct each vehicle out-of-service order received on chassis tendered by an equipment provider. The opportunity cost for a truck driver and one employee's time is calculated at \$116.35 per vehicle out-of-service order attributable to a problem chassis.⁷⁵ Therefore, reducing the Unit 2 VOOS rate for intermodal only carriers from twenty five percent to thirteen percent is expected to result in 349 fewer inspections with VOOS violations for these carriers each year. This, in turn, will result in a cost savings of roughly \$40,600 in terms of the opportunity cost of driver and motor carriers' time. The estimated cost savings also include only opportunity cost for a driver and one employee's time and do not include cost savings in terms of logistic costs - towing the vehicles to the repair shop or roadside repair costs, will only add to the total cost savings due to the potential reduction in the OOS rates for the intermodal chassis.

Second, examining motor carriers hauling "intermodal plus other" commodities, we see that these carriers received 145,377 vehicle inspections in CY2003, where 22,428 resulted in Unit 2 OOS Orders, indicating a Unit 2 VOOS rate of 15 percent. Reducing this rate to the 13 percent rate experienced by all motor carriers in CY2003 would mean the number of Unit 2 vehicle inspections of "intermodal plus other" carriers where a VOOS order resulted would be reduced by 3,529, or by 2 percent of the 145,377 vehicle inspections received by these carriers in CY2003. We believe this population may overestimate the impact of this proposed rule, for the following reasons: (1) these carriers haul commodities other than intermodal containers and as such, we do not believe all Unit 2 inspections (and VOOS orders) received by these carriers would be associated with intermodal trailers; and (2) according to the Intermodal Association of North America (IANA), there are 5,500 motor carriers who are signatories to the Intermodal Interchange and Facilities Access Agreement, and IANA indicates that intermodal movements by signatories to the UIIA represent between 80 and 90 percent of the total. For these reasons, we believe including all Unit 2 inspections and VOOS orders for "intermodal plus other" carriers in this analysis may overestimate the number of VOOS orders that could be expected to be avoided as a result of this proposed rule. However, this potential bias may be partially (or completely) offset by the use of an "average revenue per tractor" estimate for the opportunity cost, since using the commercial driver wage rate does not take into account the opportunity cost of the VOOS order on the vehicle itself (which has the ability to generate revenue when in use). Be that as it may,

⁷⁵ Using National employment and wage data, the median hourly wage for a truck driver is estimated at \$16.01 and supervisor/manager is estimated at \$21.08. With fringe benefit added to the wages, the hourly wage and salaries are estimated at \$23.39 and \$30.79 for truck driver and the manager/supervisor respectively.

using the above figure of \$116.35 as a proxy for the opportunity cost of a motor carrier's labor time to correct each VOOS order, then total expected savings from reducing the Unit 2 VOOS rate of the "intermodal plus other" carriers to the overall industry average would be approximately \$410,600 annually (or $\$116.35 \times 3,529$ inspections).

This analysis highlights the potential cost-savings resulting from increased operational efficiency of intermodal chassis via reduced VOOS orders due to this proposed rule. The analysis acknowledges that the full potential cost savings may be difficult to quantify at this time.

4 Rulemaking Analyses and Notices

4.1 Executive Order 12866 (Regulatory Planning and Review)

The Federal Motor Carrier Safety Administration (FMCSA) has determined that this rulemaking action is a significant regulatory action under Executive Order 12866, Regulatory Planning and Review, and significant under Department of Transportation regulatory policies and procedures because of the substantial Congressional and public interest concerning maintenance responsibilities for intermodal container chassis, even though the economic costs of the proposed rule do not exceed the \$100 million annual threshold.

The proposed rule entitled "Inspection, Repair and Maintenance Requirements for Intermodal Container Chassis Equipment Providers" would amend a number of requirements in the Federal Motor Carrier Safety Regulations (FMCSRs; 49 CFR Parts 385, 386, 390, 393, and 396) by (i) adding an explicit reference to intermodal equipment providers so they could be subject to the same enforcement proceedings, orders and civil penalties as motor carriers, property brokers, and freight forwarders; (ii) requiring that intermodal equipment providers submit completed Motor Carrier Identification Reports, as well as mark their intermodal equipment with a USDOT identification number; (iii) ensuring that intermodal equipment providers are held accountable for the safety and proper working condition of the intermodal equipment that they tender; (iv) requiring that intermodal equipment providers establish systematic inspection, repair and maintenance programs and maintain records documenting those programs; and (v) providing a means for effectively responding to drivers and motor carrier complaints about the condition of intermodal chassis.

Section 4118 of SAFETEA-LU directs the Department of Transportation to issue regulations relating to the roadability of intermodal equipment. The proposed rule would enable FMCSA to determine whether an intermodal equipment provider has failed to comply with the provisions or requirements of applicable statutes and the corresponding regulations and if such violations exist to issue an appropriate order to compel compliance or assess a civil penalty or both.

The purpose of this rulemaking is to (i) reduce the likelihood of crashes, attributed in whole or in part to the mechanical condition of intermodal equipment offered by equipment providers to motor carriers, without unnecessarily involving the agency in the commercial relations or allocation of liability between intermodal parties, and (ii) ensure that intermodal equipment is brought up to the same safety standards as other trailers operated in interstate commerce.

The intent of the rulemaking is to minimize the adverse safety impact in a unique market where ownership of equipment and the responsibility for properly maintaining it does not always coincide. The proposed amendments to FMCSRs would explicitly require intermodal equipment providers to maintain their equipment and to do so using the same

safety standards that apply to other trailers operating in interstate commerce. This would enable FMCSA to effectively determine whether a motor carrier or an equipment provider has failed to comply with the provisions or requirements of the appropriate regulation.

Currently, §§ 392.7, 396.11 and 396.13 of the FMCSRs require drivers to perform a pre-trip and post-trip inspection of the vehicle driven that day. The driver is required to evaluate the vehicle's components and note any defects or deficiencies. The defects must be repaired prior to the vehicle's use. These pre-trip and post-trip inspections are applicable to intermodal chassis.

Additionally, in accordance with § 396.3, every motor carrier is required to systematically inspect, repair, and maintain, or cause to be systematically inspected, repaired, and maintained, all motor vehicles subject to its control. The parts and accessories are required to be in safe and proper operating condition at all times. These include those specified in Part 393 and any additional parts and accessories that may affect safety of operation.

The proposed rule would require intermodal equipment providers to comply with the "systematic inspection, repair, and maintenance" requirements of 49 CFR 396.3. These requirements do not provide specific intervals for the routine inspections, or provide inspection criteria. The periodic inspection is required for every commercial motor vehicle in accordance with § 396.17.⁷⁶ The periodic inspection requirement of § 396.17 is intended to complement and be consistent with existing annual inspection programs.

Currently, most intermodal chassis undergo annual inspection. FMCSA believes that the equipment providers currently perform periodic inspections at least once every 12 months, as mandated by the current rule, but do not appear to be doing very much in between those once-a-year inspections (at least in terms of preventative, or systematic, maintenance and repair). The proposed rule would require equipment providers to perform more frequent "periodic inspections," presumably on a regular and easy to manage schedule. Explicit inclusion of intermodal equipment providers in the FMCSRs would increase compliance with the provisions or requirements of applicable statutes and the corresponding regulations and, if such violations are found, to issue an appropriate order to compel compliance with the statute or regulation, assess a civil penalty, or both.

⁷⁶ The term "commercial motor vehicle" includes each unit in a combination vehicle. For example, for a tractor semitrailer, fulltrailer combination, the tractor, semitrailer, and the fulltrailer (including the converter dolly if so equipped) must each be inspected.

4.2 Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires an agency to review regulations to assess their impact on small entities unless the agency determines that a rule is not expected to have a significant impact on a substantial number of small entities (SEISNOSE). This NPRM does not apply to a substantial number of small entities, and therefore we do not expect it to have a significant economic impact on a substantial number of small entities. However, we prepared the following analysis of potential small business impacts. The Agency is not currently certifying that this NPRM will not have a SEISNOSE, because we wish to gather more information on the numbers used in this analysis. FMCSA invites comment on this analysis, and whether we should certify that it will not have a SEISNOSE.

Need for the NPRM: On January 26, 2004, the Secretary of Transportation announced that the USDOT would launch a safety inspection program for intermodal container chassis. The inspection program would provide added oversight to help ensure that the intermodal container chassis used by motor carriers to transport intermodal cargo containers between seaports and rail yards are in safe and proper working order.

The announcement explained the new inspection program would be modeled on FMCSA's compliance review program already in place for the Nation's interstate motor carriers. Chassis providers would be required to obtain a USDOT number and display it on their chassis so that safety performance data could be captured. FMCSA would apply the same penalty structure and enforcement actions used for motor carriers to intermodal equipment providers demonstrating patterns of non-compliance with the new safety requirements.

Subsequently, Section 4118 of SAFETEA-LU was enacted and directs the Department of Transportation to undertake a rulemaking relating to the roadability of intermodal equipment. FMCSA, working in coordination with other USDOT agencies, initiated this new rulemaking to advance the Department's safety goal without unnecessarily involving the Department in the commercial relations or allocation of liability between intermodal parties.

Description of Actions: In this NPRM, FMCSA is proposing to amend the FMCSRs to require entities that offer intermodal container chassis for transportation in interstate commerce to (i) file a Motor Carrier Identification Report (FMCSA Form MCS-150), (ii) display on each chassis a unique identification number (i.e., USDOT number) assigned to them by FMCSA, (iii) establish a systematic inspection, repair and maintenance program to ensure the safe operating condition of each chassis and maintain documentation of the program and (iv) provide a means for effectively responding to driver and motor carrier complaints about the condition of intermodal container chassis.

Identification of potentially affected small entities: Entities likely to be affected by the NPRM are 93 steamship lines, 5 railroads, 10 common pool operators, and 1,900 motor carriers. All 93 steamship lines are foreign entities, and the provisions of the Regulatory Flexibility Act do not apply to foreign entities.⁷⁷ According to the Small Business Administration (SBA), the definition of “small business” has the same meaning as under the Small Business Act. The following table indicates the percentage of affected entities defined as “small businesses.”⁷⁸

The railroads that own intermodal chassis are assumed to be 5 major railroads in the United States and would not be considered small business as defined by the SBA. Additionally, it is FMCSA’s belief that most of the common-pool operators that own intermodal chassis would not be classified as small business by SBA size standards, given the average size of the chassis pools they are estimated to be operating.⁷⁹

The for-hire trucking industry in the United States consists of over 113 thousand interstate motor carriers.⁸⁰ Data from FMCSA’s Licensing and Insurance (L&I) database indicates roughly 125,000 active for-hire motor carriers. For-hire operators are those that offer truck transportation services to the public. The major sectors of for-hire trucking are household goods carriers, bulk carriers, tank carriers, refrigerated carriers, less-than-truckload (LTL) carriers, truckload carriers, and other specialized carriers.⁸¹ Owner-operators, as the term implies, are independent owners of individual trucks or small fleets.⁸² They generally function themselves as for-hire carriers or provide contract or ad hoc support to larger for-hire carriers or other commercial trucking operations. In addition to for-hire carriers and owner-operators, over 480 thousand other companies and governmental entities operate private fleets of trucks, which deliver and distribute products and services for their parent organizations.⁸³

Table 17: Small Business Size Standards for the Potentially Affected Industries

NAICS	Description	SBA Size Standards	% of Industry
-------	-------------	--------------------	---------------

⁷⁷ See www.sba.gov/advo/laws/title3_s2993.html.

⁷⁸ Table 17 has been calculated using 1997 Economic Census Data (2002 data for all NAICS codes are not currently available) and combining it with SBA’s size standards to estimate the number of small business. The 1997 data for revenue have been adjusted for 2003 revenue figures since SBA revenue size is given in 2003 dollars. The estimate was “at least” since there were firms that did not have revenues reported.

⁷⁹ A list of common-pool operators is available on the IICL website. The NAICS listed here represents all firms that provide support service to road transportation. Common-pool operators are part of this over-all group.

⁸⁰ 2002 Economic Census, Transportation and Warehousing, U.S. Bureau of the Census, Washington, DC, 2004, available on the Internet at www.census.gov/prod/ec02/ec0248i09.pdf.

⁸¹ *American Trucking Trends 2003*, American Trucking Associations, Inc., Alexandria, VA, 2003, p. 7.

⁸² Owner-Operator Independent Drivers Association web site at www.ooida.com.

⁸³ *American Trucking Trends 2003*, American Trucking Associations, Inc., Alexandria, VA, 2003, p. 6, reports a total of 585 thousand interstate motor truck operators of all types. The source of the information was identified as filings with the Federal Motor Safety Administration (FMCSA) as of August 2002.

		Revenue (millions)	Employee	that is Small Business
Not Applicable	Steamship lines	NA	NA	NA
482112	Railroads		1,500	NA
532490*	Other Commercial/Industrial Machinery and Equipment Rental and Leasing	\$6.0		94%
484110	General Freight Trucking, Local	\$21.5		75%
484121	General Freight Trucking, Long Distance, Truckload			74%
484122	General Freight Trucking, Long Distance, Less Than Truckload	\$21.5		72%
484220	Specialized Freight (except Used Goods) Trucking, Local	\$21.5		73%
484230	Specialized Freight (except Used Goods) Trucking, Long Distance	\$21.5		77%

*NAICS codes assumed for common-pool operators/shippers as equipment lessors listed in IICL website, such as Interpool Inc., identified them as SIC 7359 in the financial statements submitted with Securities and Exchange Commission.

The proposed rule would affect only a small percentage of trucking firms, since only approximately 1,900 trucking companies own intermodal chassis. These motor carriers belong to the five “484” NAICS codes identified in Table 17. For the most part, these entities would incur minimal increased costs to comply with the provisions of this NPRM, since they have already been directly subject to the FMCSRs; indeed, the NPRM would most likely reduce overall operational costs for most of these entities, since some of the burden for inspection, maintenance, and repair will indirectly shift to non-motor carrier chassis providers.

The regulatory impact analysis assumes that the 10 equipment lessors (common pool operators) own an estimated 320,000 intermodal chassis or about 32,000 chassis per entity. Therefore, based on this information, we assumed that these firms fall into the 20 largest firms in this NAICS codes and earned about \$3.06 billion or average revenue of \$153.2 million.⁸⁴ To have a significant impact on these entities, the estimated compliance cost would have to exceed one percent of the annual revenue stream or sales, or about \$1.5 million per firm per year for the 20 largest firms in NAICS 532490.⁸⁵ Although there is much uncertainty regarding the impact on common chassis pool operators (since the agency had difficulty acquiring information on them, it is believed that in some cases, the need to implement systematic IRM programs by common chassis pool operators may result in compliance costs exceeding one percent of annual revenues. Because of this uncertainty, FMCSA has decided against certifying no significant impact to a substantial number of small entities, and has instead decided to prepare an initial regulatory flexibility analysis (IRFA). The IRFA for this proposed rule is contained in the preamble and FMCSA invites public comment on it.

⁸⁴ 1997 Economic Census figures adjusted to 2003 dollars.

⁸⁵ Adjusting 1997 revenue reported by the 1997 Economic Census with GDP inflation adjustor.

Reporting and recordkeeping requirements: This NPRM includes a new requirement for reporting and recordkeeping for steamship lines, railroads and common pool operators that own intermodal chassis. We estimate that there are 108 such entities, none of which is a small business that would be subject to the new recordkeeping requirement.

Related Federal rules and regulations. With respect to the transportation of intermodal chassis safety operation, there are no related rules or regulations issued by other department or agencies of the Federal Government.

Conclusion. Based on the assessment in the regulatory evaluation, we do not believe that this rule would have a significant economic impact on a substantial number of small entities. However, we are not certifying that it will not have a SEISNOSE at this point, and we invite comments from the public on our analysis and whether we should certify a SEISNOSE.

4.3 Unfunded Mandates Reform Act of 1995

This rule does not impose a Federal mandate, as defined by the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1532 et.seq.), resulting in the expenditure of \$100 million or more in any one year by State, local, or tribal governments, in the aggregate, or by the private sector.